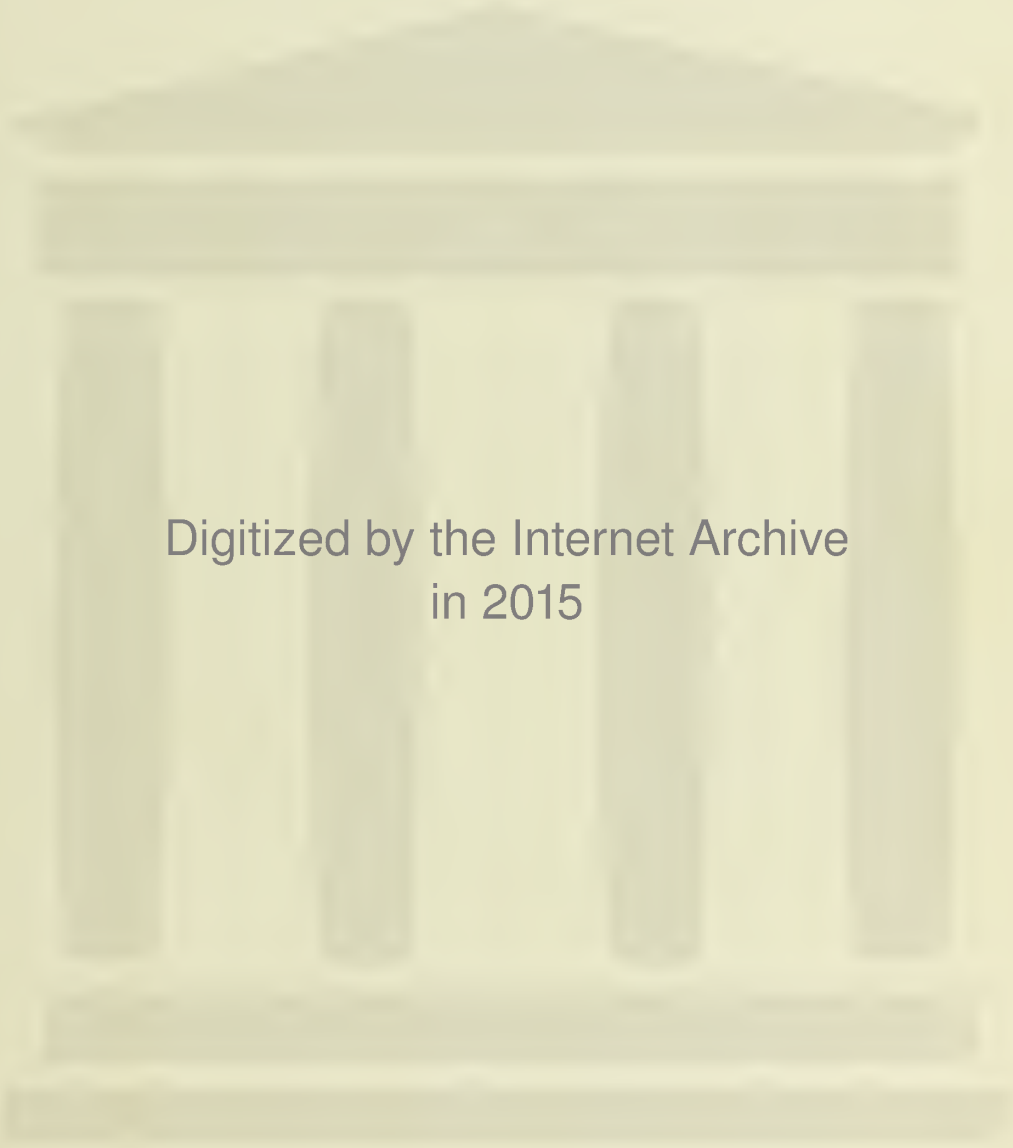


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Here is an interesting disease which probably is recognized only when it occurs in epidemics.

ERYTHEMA INFECTIONOSUM: REPORT OF AN EPIDEMIC

W. B. WADLINGTON, M.D., Donelson, Tenn.

From the time of its first report by Tschamer,¹ in 1886, under the title of "Ueber Örtliche Rötheln," *erythema infectiosum* or *fifth disease* has been reported only sporadically in the European and American literature. Of the 50 epidemics reported by 1941, most had occurred in Central Europe. One of the first clinical reports of an epidemic in the United States was by Herrick² in 1926. Since then, epidemics have been reported from various parts of the United States.³⁻⁴

The purpose of this paper is to describe the clinical picture and epidemiologic aspects of erythema infectiosum as observed in an epidemic in one community in middle Tennessee.

Incidence and Epidemiology

My associate, Dr. L. A. Beazley, and I saw approximately 100 cases of an illness which we feel is characteristic of erythema infectiosum during April, May and June of 1956. The great majority of the patients were residents of Donelson. However, the illness occurred in other communities in middle Tennessee. Dr. Robert Merrill⁷ of Tullahoma, Tennessee, also saw a large number of similar cases during this same period. He estimated there were 200 to 300 cases in the Tullahoma and Manchester area.

The first cases of erythema infectiosum in this area were found in the Dupont Primary School in Old Hickory, Tenn. The disease spread through this school so rapidly that at one time it was considered that the school might have to be closed. After this, "the rash" spread to other neighboring communities around Nashville,—Madison, Inglewood, Mt. Juliet and Donelson.

The map below shows the areas in middle

Tennessee where there have been known outbreaks of erythema infectiosum during 1956. (Fig. 1.)



**KNOWN OUTBREAKS OF ERYTHEMA INFECTIONOSUM
IN MIDDLE TENNESSEE. (In Bold Type)**

FIG. 1

We have no accurate statistics since many of our cases were diagnosed in retrospect. Also, since erythema infectiosum is not a reportable disease, no accurate public health statistics are available. Approximately 80 percent of our cases occurred in the five to ten year age group. Nevertheless, the disease may occur in any age group, though we saw no cases of this disease under 2 years or over 40 years of age. Some parents had the disease simultaneously with their children. Sex distribution was equal.

As mentioned previously, all these cases occurred during the months of April, May, and June. This seasonal incidence is the same as reported in most of the other outbreaks of erythema infectiosum.

After a careful review of our cases it ap-

peared that this disease was probably spread by droplet infection. The incubation period is apparently between 5 to 15 days and there is no substantial evidence that a "carrier state" exists. The period of communicability is unknown. The prevalence of erythema infectiosum is also unknown because this disease can be very easily overlooked when it occurs sporadically. In fact, it is felt that *most* instances of this infection are not recognized when there are only a few cases in a community.

The following two cases are presented as typical examples of those observed in this outbreak.

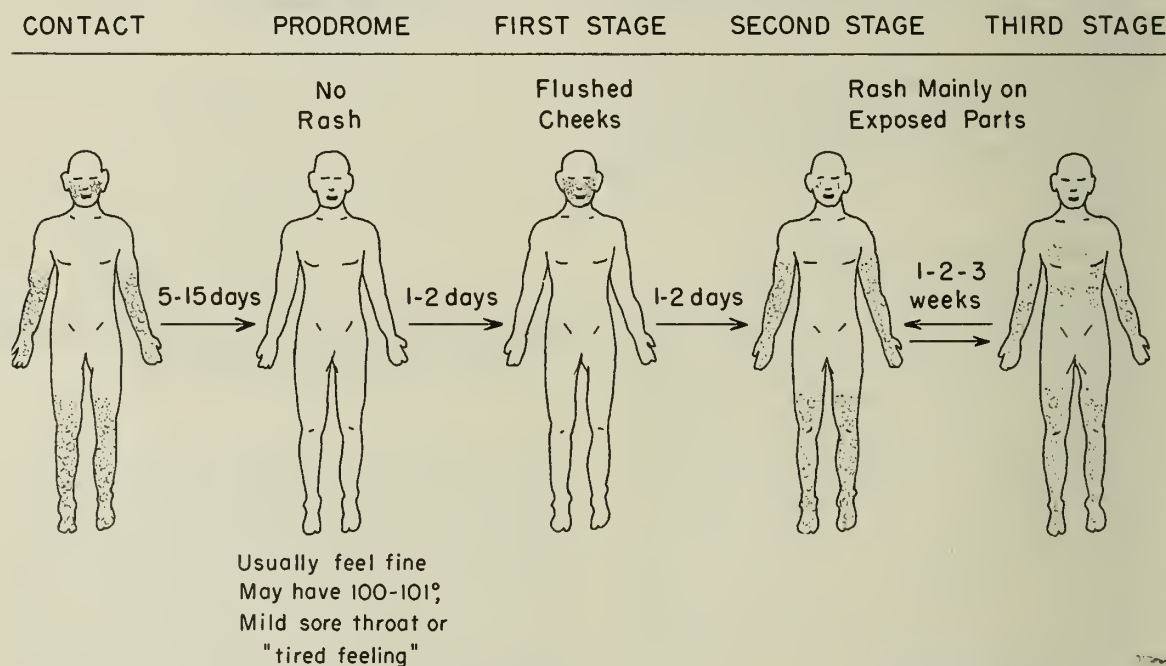
Case Reports

Case 1. M. F., a 5 year old white girl, was brought to the office because of fiery red cheeks and a rash on her arms. Although the malar flush had been present for 2 days, her mother attributed little importance to this since there had been no other symptoms. The following day,

however, she developed an erythematous macular rash on her arms after playing outdoors. Her mother stated there was almost completely clearing of the rash after she remained inside the house for a time, or on cloudy days. There was no itching, fever, or arthritis. Physical examination was normal except for her rash and the "butterfly flush" over her cheeks. An L-E cell preparation, leukocyte count, and urinalysis were normal.

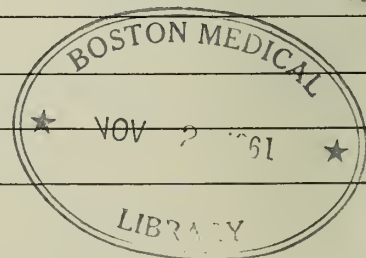
This rash varied in intensity for about four to five days. Although there was slight involvement of her trunk, it was mainly limited to the areas of her body exposed to the sunlight. Benadryl did not affect the rash. Nine days after its onset, the rash had disappeared, and no other member of the family developed similar symptoms.

Case 2. R. T., a 7 year old white boy, was sent home from school because it was thought he had measles. Several of his classmates had had a similar rash but, as in the patient, this was not associated with fever, cough, or sore throat. His family felt that the rash was allergic in origin rather than measles, (since he had previously had this disease). However, the following day when



FEVER	NONE USUALLY
WBC and DIFF	NORMAL
URINE	NORMAL
CONSTITUTIONAL S and S	NONE- PATIENT FELT FINE USUALLY
NODES	OCCASIONAL MILD ENLARGEMENT

FIG. 2



the rash was still present, they sought medical attention. Physical examination was not remarkable except for the generalized erythematous macular, nonpuritic eruption. A few nontender small cervical nodes were present. His temperature was 99 F. A throat culture revealed a normal flora and the leukocyte count was 8,500 per cu. mm. with a 6 percent eosinophilia.

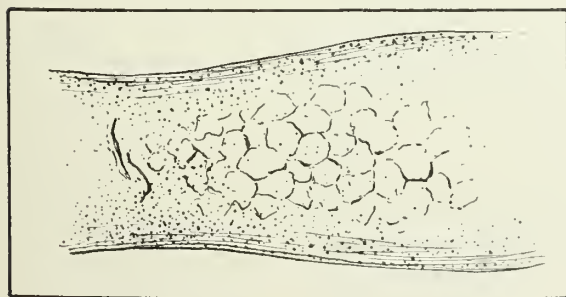
It was felt that this represented a typical case of erythema infectiosum and he was permitted to return to school without treatment. His rash cleared in approximately eight days, but one week later his mother called and said that she had developed a similar rash. She had no other complaints except for mild arthritis in her fingers and a "tired feeling" for about two days. She recovered completely in one week.

Clinical Picture

Erythema infectiosum or fifth disease is a mildly contagious disease occurring in groups of people who have close contact, such as in families or schools. As shown in figure 2, this rash usually appears in three stages.

The *first stage* is usually ushered in with fiery red cheeks with some circumoral pallor. This rash on the cheeks may be suggestive of disseminated lupus erythematosus initially because of its distribution and the fact that it is made worse by sunlight. Usually no prodromal symptoms are noted, though, an occasional patient will have low grade fever for one or two days which may be associated with some malaise.

The *second stage* usually occurs one to four days later, with the rash involving mainly the arms and legs, although it often spreads to the neck, chest, and buttocks. There is no characteristic distribution or duration of the rash on the trunk and it is nonpuritic. The rash frequently assumes a lacelike appearance with some maculation at the periphery. (Fig. 3.) None of the



Characteristic gyrate pattern, producing typical lacelike appearances.

FIG. 3.

patients complained of itching. No mucosal lesions or rash have been noted in our patients. It should be re-emphasized that in the vast majority of the cases the rash was not accompanied by any systemic symptoms and that less than 5 per cent of our cases showed any constitutional signs or symptoms throughout the entire illness. Some adults complained of feeling "run down," and a few developed mild arthritis of the fingers. *Fever is not usually a part of the general picture.*

The *third stage* usually lasts one to three weeks. It is characterized by a curious series of periodic evanescence and recrudescence usually related to sunlight or some type of trauma. It is not unusual for the rash to disappear after the first week but, after a latent period of two or three days, reappear with the same intensity. Frequently the recurrence could be correlated with a particularly warm day and many of our patients referred to it as the "sunshine disease."

The routine laboratory data obtained in many of these patients was normal. Leukocyte counts, differential counts, urinalyses, antistreptolysin titers and throat cultures were within normal limits. Complement fixation tests and viral studies are now in progress on some of these patients. In a recent communication from Dr. T. F. McNair Scott,⁸ he stated that Dr. Geoffrey Rake has isolated a virus from patients with erythema infectiosum in Norristown, Pa. The following data illustrates some of the epidemiologic and laboratory findings from an epidemic of erythema infectiosum which occurred last year in Reading, Pennsylvania.⁹

"In the spring of 1955 there were 67 recognized cases of erythema infectiosum among school children (grades 1 through 6) in Reading, Pennsylvania. There were 367 students and 9 teachers in this school. Of the 67 recognized cases among school children and their known contacts, 54 were found in those actually attending school; this figure representing a school child attack rate of 14.4 per cent. Eight cases occurred among pre-school contacts, 2 among high school contacts, 2 among the teachers, and 1 in the mother of one of the affected children. The onset of the first recognized

case was March 9. However, the next clinical case was not diagnosed until April 11. Thirty-six and seven tenths per cent of the cases with known onset occurred during the first 10 days in May and the last recognized cases occurred on June 1st. The exact date of the onset in 18 cases was unknown but was sometime between March and early June.

"Eosinophilia persisted in a few of the individuals for several months. The greatest number of the cases occurred in children ranging from 6 to 9 years of age. Distinct cytopathogenic changes in tissue cultures were observed in the 3rd passage of one stool, the 4th passage of a throat washing, and the 5th passage of another stool specimen. Rather characteristic, giant multinucleated cells developed in the three specimens. The three original cytopathogenic agents have been passed several times in monkey kidney cells and the characteristic cytopathology was observed at each passage. Complement fixation studies revealed that 5 of the 9 pairs of sera from actual cases showed at least a four-fold rise in titer."

The epidemiological data from the epidemic in Norristown, Pennsylvania, is quite similar to the Reading, Pennsylvania, data that is presented above.

Discussion

No treatment is necessary for this disease. Gamma globulin was not used as the severity of the cases in this epidemic did not warrant it.

Since no women were seen with this disease during their first trimester of pregnancy, it is unknown whether this virus will cause any fetal abnormalities. One mother developed erythema infectiosum one week prior to the delivery of her first child. She was covered with "the rash" at the time of her delivery. The baby was normal at birth, was breast fed, and did not develop any rash or other signs of illness.

The main reason for recognizing this entity is to reassure the patients and their parents of its benign course. We have seen these cases mistakenly treated for penicillin reactions, drug allergies, erythema annulare of rheumatic fever, measles and rubella. Erythema infectiosum should not

be confused with the epidemic exanthem described by Neva et al.¹⁰ Their patients were usually ill with associated fever and lesions of the mucous membrane. However, these manifestations were absent in our cases.

We feel that the clinical picture of erythema infectiosum is so classical that with a high index of suspicion the correct diagnosis can usually be made, especially during an epidemic of the disease.

Conclusions Reached from Our Epidemic and Cases from Literature

- Age Distribution . . . Any age, commonly the 5 to 10 year age group
- Season Springtime usually
- Etiologic Agent Virus (Rake) apparently
- Mode of Transmission . . . Droplet infection, no evidence of a carrier state
- Incubation Period Probably 5 to 15 days
- Clinical Picture Usually very characteristic as shown in figure 2
- Laboratory Tests Distinct cytopathogenic changes have been observed in tissue culture from throat and stool specimens, but virus recovery rate is 2-3%. Complement fixation studies from paired sera show at least four-fold rise in titer in most cases. The leukocyte count, urinalysis and throat culture were normal.
- Period of Communicability Unknown
- Mode of Control None used in our area because of mildness of illness
- Prevalence Unknown. This disease can be easily missed if it does not occur in epidemic form and is probably frequently misdiagnosed

I wish to thank Dr. Harris Riley, Dr. Amos Christie and Dr. Luther Beazley for their help in the preparation of this paper.

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Idiopathic Pericarditis. Reid, E. A. S., Hutchison, J. L., Price, J. D. E., and Smith, R. L.: *Ann. Int. Med.* 45:88, 1956.

This paper presents a review of 23 cases diagnosed between the years 1945 to 1955, and also gives a brief review of the literature on this subject. The authors note that idiopathic pericarditis is being diagnosed with increasing frequency. The criteria for selection of cases in this series were taken to be: presence of pain, a pericardial friction rub and/or a characteristic electrocardiographic pattern, and no specific demonstrable cause of pericarditis. The greatest incidence was seen in young males. Pain was the predominant symptom and was present in all cases. Upper respiratory symptoms were seen in 9 of 23 cases, dyspnea was seen in 12, and gastrointestinal symptoms in five. Four patients were afebrile. A friction rub was heard in 15, being heard as late as 42 days after the onset of illness in one patient. Pleuritis was a common associated finding, and pneumonitis was seen in 2 patients. A minimal leucocytosis was present, and electrocardiographic changes were characteristic in a majority of the cases discussed.

The authors briefly review the literature on this subject, reporting 4 recorded deaths, one of which was included in the authors group. This fatal case was discussed in some detail. Note was made that pericardicentesis might be a life-saving procedure in an occasional case. Myocardial infarction was considered the most important and difficult disorder to differentiate, though pyogenic and tuberculous pericarditis, rheumatic fever, collagen disorders, neoplasms, uremia and trauma were mentioned as other entities to be excluded.

No specific treatment was found to be effective, though bed rest until the patient is asymptomatic was advised. One patient in the series was treated with cortisone showing symptomatic relief at first, but then actually developing a recurrence while on this therapy. In this series 8 patients had recurrences, usually within the first year, and three or four attacks were not uncommon. (Abstracted for the Middle Tennessee Heart Association by William Ewers, M.D., Nashville.)

The author reports two rare instances of intra-uterine rupture of the bowel. The recognition of the lesion and immediate surgical intervention offer the only hope of saving the infant's life.

INTRA-UTERINE RUPTURE OF THE INTESTINE:—Report of Two Cases

DANIEL M. THOMAS, M.D., Oak Ridge, Tenn.

Rupture of the intestine occasionally occurs in the fetus before term, or at or near term. Peritonitis results from the entrance of the bowel contents into the peritoneal cavity through the rent in the bowel wall. When this happens before birth the intestinal contents may produce a severe degree of peritoneal irritation and marked ascites. This is called *meconium peritonitis*. The rent in the bowel may heal before birth and only the residuals of the peritoneal irritation, such as ascites and calcified areas may be present at term. When a rent in the bowel wall due to rupture is present at term the infant can ingest bacteria and an infectious peritonitis be superimposed upon the meconium peritonitis (Potter¹). This of course makes the infants' chances for survival, infinitely less and is an important reason why early diagnosis is essential if these children are to be saved.

According to Gross,² rupture of the intestine inside the uterus may be caused by adhesive bands, malrotation of the intestine, congenital volvulus, mucoviscidosis, incarcerated hernia or other abnormalities. In a significant percentage of cases, no obstruction or other cause can be demonstrated.

In 1949, Low³ reported more than one hundred cases of intrauterine rupture from the world literature, a majority of these cases were proven at autopsy. White,⁴ in 1956, reported 18 known surviving patients collected from the literature, including one of his own.

The two cases reported herein occurred in a period of six years of private practice. They illustrate the problems involved in diagnosis and treatment.

Case Reports

Case 1. D. B., a white girl, was admitted to our service at the Oak Ridge Hospital on April 25, 1951, two hours after birth at another hospital. Her abdomen was so large that delivery had been difficult. The attending physician said "she looked like a little pregnant woman at term."

An X-ray film of the abdomen and chest re-

vealed the small intestine to be centrally placed and distorted in position. There was no evidence of gas in the large bowel. Introduction of a small amount of opaque material into the rectum revealed definite obstruction at the level of about 6 cm. The possibility of complete atresia of the large bowel was considered. However, a volvulus combined with atresia of the colon was considered the most likely diagnostic possibility.

Four hours after birth an exploratory laparotomy was done by Dr. Dana W. Nance. Prior to operation a "cut-down" was done in the left ankle.

Operative Procedure: On opening the peritoneum there was a gush of a large amount, estimated at between 500-700 cc., of yellowish-brown, thick fluid. An enormously distended loop of bowel then presented itself and popped out of the abdomen. After considerable difficulty this was identified as a malrotated large bowel. The bowel was enormously distended and was of a purplish color, obviously not viable. A point near the cecum revealed a rent in the bowel about 1 inch long, through which the intestinal contents flowed into the peritoneal cavity. The entire small intestine was twisted at its root. The intestine was felt to be solid rather than hollow. Further inspection, however, showed the small bowel to contain impacted meconium of the consistency of a very constipated stool. Prior to the operation, a urinary catheter had been inserted up the rectum where it met an obstruction at about two inches. Explored from the abdominal side, the sigmoid appeared to end about two inches above the rectum in a string-like pouch. Marsupialization of the entire large bowel seemed impractical. After mopping out the peritoneal cavity, the rent in the cecum was closed with a double row of intestinal chromic catgut sutures; the viscera were replaced in the abdomen, and the abdomen closed. The patient stood the procedure well and appeared to be in good condition on her return to her room.

It was felt that her condition was hopeless and that time spent in the hospital would be an added financial burden to her parents. Therefore, she was taken home and expired there. No autopsy was done. *Diagnosis*, from the hospital record, was atresia of the rectosigmoid, malrotation of the large bowel with volvulus, gangrenous meconium ileus, and generalized meconium peritonitis.

Case 2. K. R., a female infant, was born at the Oak Ridge Hospital on March 7, 1956. She had a face presentation and was noted to have such a large abdomen that delivery was difficult. The

birth-weight was 6 lb. 15 oz. She was seen in consultation approximately 30 minutes after birth. At this time she appeared to be in good condition except for an excessively large abdomen. The abdomen was moderately tense and there did not appear to be a fluid wave. Liver and spleen were not readily outlined. Laboratory studies were normal for a newborn; the catheterized urine was negative and not excessive in amount.

In view of the findings in *Case 1* 5 years previously, it was felt that an intra-uterine rupture of the intestine with meconium peritonitis was the most likely cause of her distension.

An X-ray film of the abdomen showed evidence of hydroperitoneum and apparent calcium deposits, which were interpreted as hydroperitoneum with probable obstruction of the duodenum and very likely a meconium peritonitis.

Seventy-five minutes after birth an exploratory laparotomy was done by Dr. Robert R. Bigelow, after first doing a "cut down" on her right ankle for the administration of blood and fluids.

Operative procedure: The abdomen was opened through a left pararectus incision extending above and below the umbilicus. Before the peritoneal cavity was opened, 50 cc. of brown, thick intestinal contents were aspirated from the abdominal cavity. The abdomen was then opened and suction used to empty the meconium material from the abdominal cavity.

The intestine was then lifted out of the abdominal cavity and carefully examined. No evidence of obstruction, atresia or perforation of the small bowel was encountered. As the large bowel was exposed, a perforation about 1 cm. long was found in the superior aspect of the hepatic flexure of the colon and meconium was running from this opening. The lateral peritoneal reflection of the right colon was divided and the right colon and transverse colons mobilized. They were brought out as a double-barreled colostomy through a stab wound in the right side of the abdomen. Sutures were tied around the bowel to prevent further leakage until the colostomy became sealed off. The bowel was then replaced in the abdominal cavity which was washed out as much as possible. The abdomen was then closed in layers. Heavy tension sutures of black silk were also inserted and tied after the wound was closed. A catheter was left in the lower end of the incision and at the completion of the closure, 50 mg. of Achromycin in 10 cc. water was injected into the abdominal cavity and the catheter removed. Vaseline gauze strips were tucked in around the loops of the bowel at the colostomy opening. The loop of bowel was held up over a small rubber tube. At the completion of the procedure, the patient was in fair condition.

Postoperatively the child was carried on intravenous fluids and nothing by mouth. On the third day she was very distended and Wangensteen suction was necessary. Also on this day she had one or two small bowel movements through the colostomy.

She was soon able to tolerate a dilute formula and did well in the hospital. She was discharged on March 25, 1956, weighing 6 lb. 5¾ oz. She was having several normal bowel movements through the colostomy daily.

She has been seen at regular intervals since, and except for one episode of gastroenteritis which required hospitalization and parenteral fluids for a seven day period, she has gained weight and appears normal in every respect. There has been no clinical evidence of mucoviscidosis. It is planned to repair the colostomy at about 9 months of age.

Summary

We have presented two female infants who had intra-uterine rupture of the intestine. Meconium peritonitis should always be considered when a newborn is noted to have a greatly enlarged tense abdomen. X-ray studies are indicated at once, and if other disease is not evident, immediate laparotomy is indicated and may be life-saving. The infants who have no demonstrable obstruction, and thus require less surgical intervention, would appear to have the greatest chance for survival.

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I am indebted to Drs. Dana W. Nance and Robert R. Bigelow, the surgeons who operated on these two patients; to Drs. Robert Ball and Herbert Kerman, radiologists, and to our associated pediatricians; Drs. Lewis F. Preston and Velta F. Briuks, who took part in the pre- and postoperative care. Dr. Lewis Killeffer referred the first case to us, and Dr. Robert E. DePersio, the second.

The complications of chronic mastoiditis will continue to be encountered from time to time. Therefore the physician must be on the lookout for them.

INTRACRANIAL COMPLICATIONS OF CHRONIC MASTOIDITIS*

HARRY R. MORSE, M.D., Knoxville, Tenn.

Is mastoiditis and its life threatening complications a disease of the past? Many are under this impression. It is not uncommon for an internist to ask, "Do you still do mastoids? I thought that penicillin had changed all that." It is our obligation as otolaryngologists to dispel this misinformation. I wonder how many of this group here today have seen a mastoid infection temporarily camouflaged by the antibiotics, and then suddenly erupt with a brain abscess or meningitis? I would venture to say that most of us have seen at least one such case recently, and I predict that we will see increasing numbers with resistant organisms multiplying daily and with the rapid increment of allergic reactions to the "wonder drugs." It has been estimated that 6 per cent of all patients are allergic to penicillin,¹ and the number is growing rapidly.

What are the complications of mastoiditis? For the most part they are secondary to chronic disease. Some of the more serious complications of mastoiditis are: (1) facial nerve paralysis; (2) labyrinthitis; (3) petrositis; (4) lateral sinus thrombosis; (5) brain abscess; and (6) meningitis.

In the time allotted I cannot begin to cover these complications even in part. However, I will present two cases which illustrate nearly classical examples of several of these extensions of chronic mastoid disease.

Case 1. Mr. J. A. C., a white man of 39, gave a history of otorrhea on the right of 12 years duration. Two weeks prior to admission he developed symptoms which he thought to be the "flu." For the two to three days just before admission, he noted some pain on flexing his neck, fever and severe chills. He continued on his job as a milkman and even made his morning milk run the day of admission.

On *physical examination*, the temperature was 101, pulse 100, respiration 24, and B.P. 128/62.

The patient was an alert, well nourished white man. He appeared to be acutely ill. The right external auditory canal was filled with foul, purulent drainage. The tympanic membrane was largely destroyed and the middle ear was filled with granulation tissue. The mastoid was tender over the antrum. There was definite stiffness of the neck.

A spinal tap was done and the fluid found to be cloudy; there were 10,500 cells, 90% polys and 10% lymphs. No organisms were seen on direct smear, but numerous coliform bacilli were isolated on culture. A blood culture was sterile.

X-ray films of the mastoid bones were reported as showing sclerosis and under-development of the right mastoid, but no evidence of cholesteatoma or destruction of bone.

Operation. A postauricular radical mastoidectomy was done. The mastoid was found to be very sclerotic; a small antral cholesteatoma was encountered. Over the midportion of the sinus plate a definite erosion was found with exposure of the sinus. The lateral sinus was exposed throughout its mastoid course and opened with a longitudinal incision and a large granular thrombus removed. This was followed by free bleeding from each end of the sinus. The sinus was packed with sulfathiazole packing and the usual dressing applied.

Postoperatively the patient did well. His only complaint was headache which persisted for two weeks and gradually subsided. Large doses of the antibiotics were continued during his convalescence. He was discharged on his 14th hospital day and followed as an outpatient.

Case 2. Mr. B. H. O., age 35, a white man, gave a history of otorrhea of 15 years duration. Approximately 10 years prior to his admission, he developed severe pain in his right ear and apparently a facial nerve paralysis. This cleared up and he was well except for foul otorrhea until two weeks prior to his hospitalization, at which time the drainage ceased and right temporal headache was noted. This became gradually worse and his local doctor gave him large doses of penicillin and erythromycin. Two days prior to admission severe chills and fever were noted.

Examination. Upon admission, the temperature was 99.4, pulse 85, and respiration 20, and B. P. 130/72. The patient was lethargic. The right external auditory canal was filled with a purulent foul discharge. The tympanic membrane was destroyed and the middle ear filled with granulation tissue. The right mastoid was tender over the antrum. The optic discs showed very early choking with distention of the veins. The neuro-

*Read before the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 12, 1955, Chattanooga, Tenn.

logic examination was negative except for nuchal rigidity.

X-ray films of the mastoid bones revealed a very sclerotic mastoid with an area of bony erosion over the sinus plate.

Operation. A ventriculogram attempted without success. This was followed by an endaural mastoidectomy under local anesthesia. When the area of the lateral sinus was reached, there was a release of a large amount of purulent material. There was a very definite erosion of the sinus plate. The dura of the posterior fossa was widely exposed and found to be thickened, tense, and covered with granulation tissue. The dura overlying the tegmen tympani was also widely exposed and appeared normal. It was the very definite opinion of the neurosurgeon that nothing further should be done at that time. In retrospect, I believe this was a serious error.

Course. Postoperatively, the patient did quite well until the 6th day when he became lethargic, developed marked papilledema, and definite signs of a temporal lobe abscess. Another ventriculogram was done which revealed a shift of the ventricular system to the left. A craniotomy followed immediately and an abscess was encountered 1.5 cm. from the surface of the temporal lobe just above the ear. Drainage by catheter was instituted.

Cultures taken at the time of operation revealed gram positive cocci and gram negative rods which were resistant to all the antibiotics except Chloromycetin and Furadantin.

During the next few weeks the mastoid cavity was treated for cleanliness and insufflations of iodine boric acid powder. The catheter in the abscess was irrigated with a solution of Chloromycetin. Large doses of Chloromycetin were given throughout this period orally. The patient responded slowly and was discharged on his 36th hospital day.

Three days later the patient was re-admitted in coma with projectile vomiting, marked papilledema and a central paresis of the left seventh nerve. The craniotomy incision was reopened and a total excision of a posterior temporal lobe abscess of the right side was carried out. The patient seemed to improve for a short time, but died 5 days after his second admission.

Necropsy revealed the brain to be tense. As the brain was removed a large quantity of greenish exudate was found along the tentorium, and upon incision of the tentorium purulent material was found within the lateral sinus. A large abscess was present in the right cerebellar hemisphere and on section several smaller abscesses were within the cerebellum, one being very close to the midline and involving a portion of the brain stem.

Discussion

These two cases illustrate a number of important points and I would like to enum-

erate several of these in a rather cursory manner for emphasis.

(1) *Brain abscess.* Chronic mastoiditis is the most common source of brain abscess. Acute otitis media and paranasal sinusitis account for most of the other cases. A distant focus of infection is much less common. The infection reaches the central nervous system either by direct extension or by the hematogenous route. Stuart² and his group recently called attention to an apparent increasing number of cases which act like an early brain abscess but resolve without progressing to actual abscess formation. They feel these cases are due to a thrombophlebitis of the cerebral veins and suggest the increase may well be due to the antibiotics which arrest the process just short of a brain abscess.

What are the signs and symptoms of brain abscess? Unfortunately the onset may be very insidious and the objective signs meager or absent. It is truly amazing how much destruction of brain tissue may be present with practically no localizing signs. The history of chronic otorrhea is highly significant. The physical findings of chronic otitis media and mastoiditis are familiar to all of us. In the presence of chronic otorrhea we must be suspicious of constant severe headache, somnolence, and low grade fever. The usual course is that of chills and fever, malaise, headaches, vomiting, all of which may be followed by a latent period of a week to several months. Again it is important that the antibiotics may mask the picture and make the diagnosis even more difficult. During the latent period there may be no signs or symptoms. However, the eventual termination is a sudden flare-up of the symptoms and very often death in a few days or in several weeks. Terminally the abscess often ruptures into a ventricle, subarachnoid space, or into the lateral sinus.

Neurologically, the localizing signs, if present, depend on the location of the lesion. In a classical temporal lobe abscess, the findings are: (1) sensory aphasia, if the dominant lobe is involved; (2) homonymous hemianopsia; (3) signs of increased intracranial pressure,—papilledema is usually late; and (4) loss of hearing is of little value in establishing a diagnosis. The entire

temporal lobe may be removed with a resultant loss of approximately 5 DB. The only single central lesion which can produce significant deafness is a lesion in the midbrain close to the pineal gland.

With a cerebellar abscess the signs may be even more meager and often the diagnosis is evident only terminally. The classical signs are asynergy, nystagmus, past-pointing, slurring of speech, positive Romberg test, and marked interference of gait.

(2) *Lateral sinus thrombosis*. This results from the direct extension of mastoid infection, or may be secondary to thrombophlebitis of the small veins of the mucous membrane of the middle ear. These veins communicate directly with the lateral sinus. Often there is a perisinus abscess which is followed by a phlebitis and the thrombosis. The thrombus may propagate in either direction. It may be sterile or infected. The main danger of an infected thrombus is the showering of the blood stream with infected emboli.

How may we recognize lateral sinus thrombosis? The onset is usually marked by chills and fever. Headache is a consistent and constant complaint. Brunner states that many of these cases with full-blown sinus thrombosis will walk into your office under their own power. However, they do look extremely ill. With progression nausea, vomiting, shock, convulsions and stupor ensue.

The spinal tap with the Queckenstadt test, or a modification (Tobey-Ayer or Crowe's test) will greatly aid in the diagnosis. Due to anatomic variations in the venous sinuses these tests are not completely reliable.

(3) *Meningitis*. This often either precedes the brain abscess or sinus thrombosis, or may be a terminal event. It may be localized or generalized. Meningitis is characterized by chills and fever, headache, rapid pulse and respiration, early vomiting, and nuchal rigidity. Convulsions either generalized or of the Jacksonian type may be present. Extra-ocular palsies and unequal pupils are often present. Choking of the optic discs is rarely pronounced. Terminally delirium and coma are present.

Aseptic or serous meningitis may result from epidural abscesses or sinus thrombosis. The diagnosis is established by spinal tap

and microscopic examination of the fluid. The pressure is usually elevated. No organisms are present on direct smear. Of the cells present the lymphocytes usually predominate. If such a diagnosis can be made and adequate therapy instituted, the more serious intracranial complications can often be prevented.

Finally, a few words concerning therapy. First, the antibiotics are, of course, invaluable in the treatment of otitis media and mastoiditis. Cultures with sensitivity tests are of great value in the selection of the drug or combination of drugs. A few years ago, Crowe⁴ reported that 50 per cent of the cases of lateral sinus thrombosis were due to a hemolytic streptococcus. The flora of these ears has changed, since the wide spread application of the "wonder drugs." We are encountering resistant strains, and organisms formerly considered as saprophytic are emerging as pathogens.

2. Secondly. The value of the anticoagulants has not been ascertained, but certainly in view of their application for thrombophlebitis in other fields, they would seem a valuable adjunct to therapy.

3. Thirdly. When we are faced with a definite brain abscess which has involved the brain by a direct extension from the mastoid, I feel it is our obligation to attempt decompression and drainage through the mastoid cavity. Some of the neurosurgeons will disagree on this point.

4. Lastly. The best possible treatment is prevention. Most of these ears give adequate warning of impending disaster. Most of them have been treated from time to time by competent otolaryngologists. I firmly believe that we must place increasing importance on the clinical examination and less emphasis on the X-ray film. The absence of X-ray evidence of cholesteatoma or bone destruction should not relax our vigilance. Many of the sclerotic mastoids by roentgen examination are potentially dangerous. The answer is earlier surgical therapy. These ears must be made safe by complete and adequate mastoidectomy.

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Mechanisms of QRS Complex Prolongation in Man, Right ventricular conduction defects. Dodge, H. T., and Grant, R. G. Am. J. Med. 31:534, 1956.

The authors discuss 80 cases of right ventricular conduction disturbances in cases with electrocardiograms available before and after right bundle branch block developed. This apparently is the first controlled study of the electrical effects of right bundle branch block in man. In all instances the initial electrical forces of the QRS interval were unchanged by the development of the right bundle branch block; this is in contrast to what has been reported in experimental right bundle branch block. This point is explained by suggestive evidence indicating that the lesion in clinical bundle branch block lies more distally than in experimental bundle branch block. The studies presented suggest also that there is no period when right ventricular excitation is arrested or delayed in clinical right bundle branch block, but that excitation instantly "leaks" out into the right ventricular myocardium when it reaches the site of the block.

The findings in this series confirms the observation of others that the "Q" wave criteria for the diagnosis of infarction are valid in the presence of right bundle branch block, the only exception to this being in strictly posterior infarctions. The electrocardiographic syndrome of diaphragmatic peri-infarction block is described, and criteria for differentiating it from right bundle branch, which it closely resembles, are offered. Two cases of diaphragmatic peri-infarction block without deformity of initial QRS factors (a previously unrecognized electrocardiographic manifestation of infarction) are discussed. (Abstracted for the Middle Tennessee Heart Association by William Ewers, M.D., Nashville.)

CASE REPORT

Hemangiopericytoma

John G. Riddler, M.D., Chester K. Jones, M.D.,*
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Huntingdon, Tenn.

In 1942, Stout and Murray¹ desented the microscopic characteristics of a new group of neoplasms known as hemangiopericytoma. Since then approximately 125 instances have been reported, and on the basis of these cases the clinical characteristics have been fairly well defined.

Briefly, it can be stated that: (1) these tumors may arise in any location since the cell of origin, the pericyte, is a part of glomera which are scattered throughout the body; (2) these neoplasms vary in size from a few millimeters in diameter to large bulky masses; (3) the visible and palpable features are of little value in diagnosis; (4) both sexes are affected and the age range varies between newborn infants and patients in the tenth decade; and (5) growth may be slow or rapid, and approximately 30 per cent are proven to be malignant either by the microscopic features of the primary tumor or this subsequent clinical course. Many of the previously reported cases have been followed for only short periods of time, and autopsy data are scarce. We feel that publication of the clinical and autopsy features of this case is worthwhile.

Report of Case

A 46 year old white man was admitted because of subcutaneous tumor mass in the upper lateral part of the thigh which had been palpable for 9 months. During the last 3 months he had noted rapid growth and tenderness in its central portion.

Physical examination revealed no abnormalities except a tumor of the thigh measuring approximately 4 by 6 by 3 inches. While the patient was standing, the mass was dusky blue and surrounded by moderately large superficial veins. Palpation revealed increased temperature, no evidence of a capsule, and no fixation to bone. Slight compressibility was noted on digital pressure as well as moderate discomfort. Blood count, urinalysis, chest fluoroscopy, and X-ray study of right femur were normal.

At operation the tumor was found superficial and deep to the fascia lata and had extended widely into the regional muscles and fascial

planes. Frozen sections revealed extreme cellularity and marked anaplasia. All grossly involved tissue was excised and the wound was closed.

The removed tumor mass consisted of two pieces of tissue weighing in aggregate 272 grams. The tissue showed glistening, pale-tan soft tumor tissue arranged in lobules with some bright yellow foci. The tumor was surrounded by fat, muscle and fascia. Microscopic sections revealed a tumor with a primary vascular component. There were great numbers of minute capillary spaces surrounded by perithelial-like cells. The cells in many foci revealed the perithelial whorling indicative of a hemangiopericytoma. (Fig. 1.)

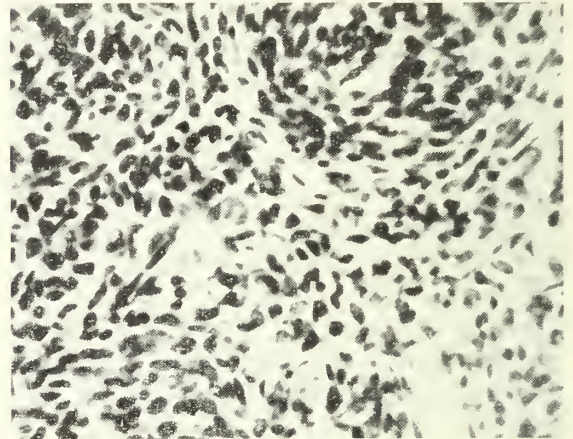


FIG. 1. Photomicrograph of original tumor showing the perithelial whorling found in hemangiopericytoma. (Hematoxylin-Eosin, x 430.)

The tumor invaded the fat, fascia and skeletal muscle.

Course. The patient was seen four months after operation and was asymptomatic. The surgical wound was well healed but residual tumor was palpable. He remained in good health until 7 months from his initial visit; then became dyspneic and failed rapidly until his death on July 12, 1955.

At autopsy the body was that of an extremely cachectic 46 year old white man. The skin showed a diffuse icterus. The abdomen was distended and tense. The right hip revealed a linear healed scar beneath which there was an irregular rubbery nodular tumor mass measuring 8 by 5 by 5 cm. The peritoneal surface of the left diaphragm was convex in outline and nodular. Reflection of the transverse colon revealed fat necrosis over the anterior surface of the body of the pancreas. The right pleural cavity contained fibrous adhesions. The left pleural cavity was entirely obliterated by dense fibrous adhesions and very friable tumor tissue. This tumor mass was of such a size that the entire mediastinum was shifted to the right. The pericardial cavity contained both fibrous and fibrinous adhesions. The left lung weighed 4,000 grams, the right 650 grams. The pleural surfaces of the left lung were completely eroded by gray friable tumor tissue which was densely adherent to the chest wall and had caused pressure erosion

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of several ribs. The cut section of the left lung mass revealed nodules varying in size from millimeters to centimeters. These nodules consisted of tan-gray tumor revealing rather brilliant yellow stippling in scattered areas. The right lung revealed tumor masses apparently arising from the pleural surfaces by small pedicles. These tumor masses on section were identical to those seen in the left lung. The tumor in both lungs had the interesting feature of appearing to arise from one small focus and growing in an autonomous fashion so that nodules had attachment to surrounding tissue by only a small pedicle. The pancreas revealed diffuse gray-yellow grumous patches of fat necrosis. The liver and extrahepatic bile ducts showed no disease and the other organs were likewise negative.

Microscopic sections of the tumor within the lungs revealed a tumor composed of a perithelial-type cell much more densely packed than that seen in the primary tumor. The vascular component of the tumor in the pulmonary metastases, where present, was not nearly so prominent as in the original lesion. The metastases revealed a great many more mitotic figures as well as considerable necrosis not seen in the primary lesion. The general architecture of the metastatic lesion was more that of an anaplastic sarcoma than the whorl-like architecture of the original hip lesion. Microscopic sections of spleen, pancreas, liver,

adrenals, kidneys, prostate and bone marrow failed to reveal any evidence of tumor. The brain was not examined.

Discussion

A considerable percentage of these tumors occur in the subcutaneous tissue and therefore may be visible and/or palpable. Pack and Miller² believe that malignant hemangiopericytomas may occasionally originate from benign neoplasms such as hemangiomas and lymphangiomas. As in many other malignant neoplasms, wide surgical excision performed early has given the best results. No definite conclusion can be given at this time regarding the effect of X-ray therapy on this particular tumor, however, some palliation was afforded in a case reported by Stout and Murray.¹

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The nausea and vomiting of pregnancy may be annoying, troublesome or serious. The author gives his experience with the combination of an antihistamine and pyridoxine.

HYPEREMESIS GRAVIDARUM: ORAL ANTIEMETIC THERAPY WITH BONADOXIN

J. EARL BAKER, M.D., Memphis, Tenn.

It has been estimated that 50 per cent of all women have nausea and vomiting, to some degree, during pregnancy.¹ Many etiologic factors have been suggested for this undesirable condition, including psychic mechanisms, allergic reactions to toxic substances of placental or fetal origin,² and the influence of the vomiting center by tonic excitatory, and inhibitory stimuli.³ Abnormally high histaminase levels in the blood of pregnant women have been interpreted by some investigators as an indication that the vomiting must be due to an increased liberation of this enzyme in pregnancy.⁴ Other workers report that there is evidence of pyridoxine deficiency in pregnancy, and that this occurrence may be an important etiologic factor.⁵ Pregnant women have been found to retain administered pyridoxine (vitamin B₆) in a significantly greater amount than have non-pregnant control subjects.⁶ Generally, however, the etiology of nausea and vomiting in pregnancy is poorly understood.

The number of theories on the etiology of nausea and vomiting in pregnancy are equalled, or even exceeded, by suggestions on its therapy. Finch⁷ injected graduated doses of progestin in oil, aiming at the desensitization of patients with nausea who were sensitive to their own corpus luteum secretions. Cartwright, using Dramamine in a placebo-controlled study, found that the drug afforded only about 10 per cent more protection than placebos. One investigator experimented with a combination of menadione bisulfite and ascorbic acid,⁸ while other workers used adrenal cortical hormones,⁹ all claiming successful treatment in small series of patients.

Chlorpromazine, one of the newer agents, was reported to be of value, but toxic reactions, such as liver, kidney, and bone marrow damage may occur.¹⁰ Recent clinical reports¹¹ indicated that Bonadoxin* is

highly effective in the prevention and treatment of nausea and vomiting of pregnancy. This preparation contains 25 mg. of meclizine hydrochloride, 1-(p-chlorobenzhydryl-m-methyl-benzyl piperazine dihydrochloride) and 50 mg. of pyridoxine hydrochloride, combined in one tablet. Since meclizine hydrochloride is an antihistaminic that has been used successfully in the management of motion sickness, inducing prolonged therapeutic effect, and the value of pyridoxine in vomiting of pregnancy has been established,¹² it was assumed that the combination of the two agents would be of greater value than previous medications used.

Clinical Application and Results

Altogether, 50 pregnant women, 19 primipara and 31 multipara, were treated with the antiemetic preparation over a period ranging from 10 to 21 days (see Table 1).

Table 1

Number of Patients	RESPONSE Response in days	TO BONADOXIN Duration of therapy in days	THERAPY Remarks
42	2-3	10-14	No more symptoms after 3 days
4	3-7	14-18	No more symptoms after 7 days
3	7-10	18-21	Responded after 7 days but symptoms recurred until 21 days of therapy
1	None	14	Patient received glucose i.v., without success.

Total 50

The youngest of the patients was 16 and the oldest 37 years old. One to two tablets taken at night were sufficient to control the nausea and vomiting which, before therapy, usually occurred in the morning and sometimes later in the day. Results indicated that 42 patients of the 50 responded to Bonadoxin treatment after 2 to 3 days. No nausea or vomiting was reported after this period of time. Nevertheless, medication

*J. B. Roerig and Company
(Div. Chas. Pfizer & Co., Inc.)

was continued over a 10 to 14 day period, for prophylactic purposes. Four of the patients responded to therapy after one week, and were given the tablets from 14 to 18 days. Three of the women benefited from the treatment after one week, but some of the nausea remained until 18 to 21 days of treatment.

One of the patients with pernicious vomiting and dehydration of such intensity that hospitalization was required received intravenous glucose along with Bonadoxin, without benefit from the antiemetic preparation. However, all of the patients accepted and tolerated the tablets well. No correlation was found between the age of patients and their response to therapy. There were no side effects with the exception of one patient who experienced slight drowsiness the first two days she took the medication. After that the drowsiness was replaced by a feeling of well-being and the patient reported a prompt effect from the preparation.

Below are given the case reports of one patient who responded excellently to therapy and of another who responded fairly well to treatment.

Case 1. J. L. aged 24, a primipara whose estimated date of conception (EDC) was December 28, 1955. The patient presented herself 10 weeks after EDC when uterine pregnancy was diagnosed. After examination, the patient was found to be sound physically and mentally, with a slightly high-strung behavior pattern. She complained of pronounced nausea in the morning that was accentuated by the smell of bacon which she prepared for the husband's breakfast. The nausea was frequently followed by slight to pronounced vomiting.

One tablet of the antiemetic preparation was prescribed and the patient instructed to take the tablets before retiring. She was told to increase the dosage to two tablets if there was no effect after 3 days. Two days later the patient reported by telephone that the medication had alleviated most of the nausea and vomiting after taking the first tablet, but the nausea was slightly aggravated by the smell of bacon. No vomiting was encountered at this time. After the second day of taking one tablet at night and thereafter, no nausea or vomiting was encountered, even when the patient cooked bacon.

Case 2. I. B., a primipara, whose date of conception was determined at December 27, 1955. She had severe pernicious nausea and vomiting previous to antiemetic therapy and had to be hospitalized for one week. She had to be given

parenteral fluids and sedatives and achieved some relief of symptoms.

After leaving the hospital she was instructed to take one Bonadoxin tablet nightly before retiring, since the symptoms had not appreciably subsided. As this dosage did not relieve her nausea and vomiting, it was increased to two tablets nightly after two days treatment. Therapeutic response occurred after one week when her symptoms were almost controlled. A slight inclination toward nausea remained until the 19th day of treatment. After this period the patient reported considerable improvement and no more nausea and vomiting occurred. No further hospitalization was necessary. Delivery occurred at term and was uneventful.

Summary

Bonadoxin, an oral antiemetic preparation, was given to 50 pregnant women having various degrees of nausea and vomiting. Dosage was 1 to 2 tablets taken at night. Forty-two of the 50 patients responded to the medication after 2 to 3 days of therapy, four patients after 3 to 7 days, and 3 after 7 to 10 days of treatment. No side reactions were reported except in one patient who had temporary drowsiness, which was later replaced by a feeling of well-being.

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STAFF CONFERENCE

University of Tennessee*

Surgical Treatment of Parkinsonism

DR. DOUGLAS HAWKES: The conference this afternoon will be devoted to a discussion of a patient with Parkinsonism treated by the new technique of chemopallidectomy. The patient himself is somewhat of a medical monument since he represents one of the few remaining patients who developed Parkinsonism following the epidemic of influenza and encephalitis in World War I, and has been seen and known by many of us over a period of many years during which time he has been coming to the Neurology Outpatient Department. He has had trials on practically every new medical treatment of Parkinsonism that has come out, but has been spared any surgical attack up until the present time because of his general good adjustment and the formidable nature of previous surgical measures. The history of this patient will be given by Dr. Liberakis.

DR. EUSTACE LIBERAKIS: This is a 56 year old colored man who, following an infectious disease, the nature of which is not well specified (approximately 27 years ago), developed a tremor of the fingers of his right hand.

Three or four years later he developed shaking of the whole upper extremity and then shaking of the head. Within the next two or three years he developed difficulty in walking. During the last 7 years his voice has become weak. There is nothing else important in the history and there is no history of neurological symptoms such as headache, vision trouble, convulsions, somatic pain, paralysis, or anesthesia.

In the *physical examination* he appeared to be a well developed, well nourished, colored man, with expressionless face and pill-rolling tremor of the right hand. He was fully alert, intelligent, and cooperative. He talked with an emotionless slow voice and could not speak loudly. There was nothing else important in the physical examination except the nervous system. In the neurologic examination the cranial nerves were intact except for some asymmetry of the facial muscles. There was a lack of expressional movements of the face. There was a coarse tremor with a frequency of

three per second of the fingers of the right hand. There was a tremor of the whole upper extremity especially when he was excited. This tremor was absent during sleep. He was unable to perform correctly the finger-to-nose test. He walked with a shuffling hesitating gait, without associated movements of the upper extremities, and appeared to have a tendency to fall forward. The heel-to-knee test was performed with hesitation and tremor in both sides, but much more in the right. In general, the symptoms were almost entirely limited to the right side. There was, however, a slight tremor in the left arm. The impression was Parkinsonism almost entirely limited to the right side with etiology, postencephalitic.

DR. HAWKES: Before going on to the treatment of this particular case we will have some comment upon Parkinsonism itself, starting off with a few remarks by Dr. Cheek about the pathologic findings.

DR. WILLIAM CHEEK: Parkinsonism appears to be divisible into essential or primary, and secondary forms. The essential type appears spontaneously during or after the involutional period, and the secondary type is seen following epidemic encephalitis, cerebral trauma, and certain chemical poisons, among them manganese and carbon monoxide. The pathologic changes tend to concentrate somewhat in different areas in these different types, the substantia nigra appearing to be principally involved in a number of postencephalitic, postinfectious cases and the globus pallidus and putamen in the essential forms. Rarely the involvement may be sufficiently severe to be grossly visible as focal softenings, sometimes associated with cerebral arterial disease. More commonly it is a microscopic quantitative change evidenced by loss of neurones and nonspecific cell changes, including shrinkage or swelling of neurones and sometimes pigmentary changes.

DR. HAWKES: Thank you. The clinical aspects of the Parkinsonism syndrome and the forms of treatment from the medical standpoint will be presented by Dr. Lasater.

DR. GENE LASATER: This patient demonstrates the cardinal symptomatology of Parkinsonism, showing both the characteristic tremor and the signs and symptoms that result from the increased muscular tension or rigidity. The tremor of Parkinsonism is classically referred to as a resting tremor, since the abnormal movements are more pronounced when the extremity is at

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rest, and tend to be reduced in amplitude or disappear entirely upon the initiation of voluntary movements. The distal parts of the extremities are more severely affected by the tremor, especially the hand, the movements being most obvious at the metacarpal-phalangeal joints resulting in so-called pill-rolling movements. The rigidity differs from the spasticity of pyramidal tract disease in that the increase in muscle tone is relatively equal between agonist and antagonist muscles. The symptoms produced by the rigidity may be summed up as "poverty of movement." Muscles of the face are fixed in an immobile expressionless fashion. Facial expressions change seldom and there is infrequent blinking, leading to the characteristic masking or reptilian type of face. Muscles of speech are affected by this rigidity producing a monotonous type of dysarthria in which the patients have little inflection of tone. So typical is this dysarthria that it can be recognized over the telephone. In the lower extremity the rigidity limits the range of motion, not only in elevating the foot, but also in forward motion. The step becomes short, the foot is incompletely raised from the floor, and the gait becomes shuffling. Because of the inability to take a long step the center of gravity is sometimes displaced forward and the patient is unable to catch up with it. He tends to move faster and faster until he bumps into something, or falls. This is a type of gait referred to as propulsive or festinating. Another feature of this disease which often helps in the recognition of early Parkinsonism is the loss of associative and automatic movements. This is best seen when the patient walks, as a loss of automatic swinging of the arms as a part of normal gait. These symptoms are characteristic of any type of Parkinsonism. In addition, some of these cases that follow encephalitis show oculogyric crises, periods of somnolence, lethargy, and increase in salivary secretions.

Most individuals with the Parkinsonism syndrome whose symptoms are mild to moderately severe can be handled adequately on a medical basis. There are many aspects of medical treatment, the most important of which are drug therapy, physiotherapy, and psychotherapy. The backbone of drug therapy has been the solanaceous drugs to-

gether with the newer synthetic preparations which have atropine-like properties. A few of these which are in common usage today are atropine itself, scopolamine, stramonium, various proprietary preparations of these atropine alkaloids, such as Rabellon and the newer synthetic compounds such as Artane, Pagitane, Parsidol, Kemadrin, and Cogentin. The latter is a chemical combination of atropine and Benadryl; the latter having been found to be of some value in itself. The maximum benefits from drug therapy can be achieved only if these are given in quantities suitable to the particular patient. It is not enough to simply write a prescription for a certain number of tablets and let the patient go on his way. The drugs must be titrated according to the symptoms, just as is the case with anti-convulsant drugs for seizures or insulin for diabetes. Each drug also has certain side effects which are common to all atropine-like preparations. Some of these at least are used as indications of the amount of the drug that the individual can tolerate.

The patient at first should be started on a small amount of the selected drug. This is then gradually increased over a period of time until toxic manifestations appear. The most commonly used toxic symptom for limitation of drug dosage is noticeable blurring of vision. Dryness of the mouth may appear at much lesser levels but usually can be handled adequately by having the patient suck on hard candy, or a piece of lemon. When the amount of drug has been increased to the point in which marked blurring of vision appears, it is gradually reduced to a dosage that is just below this point. This then is the maximum dose that this patient can tolerate without the development of undesirable side effects. He should be kept on this dosage for about three months so that he will be able to experience for himself the maximum benefits that he can obtain from this particular compound. If the response is inadequate or not as beneficial as the doctor desires, he may add another drug to the initial one. If no response has been obtained, he may discontinue the first drug, and begin another in similar fashion. It should be pointed out that patients with Parkinsonism, taking large doses of atropine or atropine-like com-

pounds, tolerate extreme hot weather poorly, and are subject to heat strokes. Consequently, during the hottest part of the summer, their medications should be reduced to approximately one-half.

Another important aspect of treatment is that of physical therapy. Patients with severe rigidity are especially prone to develop contractures of their extremities, so that they should not be allowed to become immobile for any period of time. Even if they require hospitalization for some unrelated condition, they should receive passive exercises, in order to prevent the development of contractures during their period of bed rest. At home, patients should be instructed to engage in some exercise daily, if this involves no more than a walk around the block. Hobbies which require them to be active, such as gardening and woodworking are beneficial.

As in any chronic disease, the psychological aspect is especially important. The physician, treating the patient with Parkinsonism, should at all times maintain an attitude of optimism and encouragement. He should allow the patient to ventilate his feelings and discuss with the family the nature of the patient's disease so that they will have a more tolerant attitude toward his disability.

Medical treatment has often proved disappointing in alleviating severe symptoms. For this reason, recent developments in the surgical treatment of Parkinsonism have been followed with considerable interest on the part of those of us who are often called upon to manage these patients. The remainder of our discussion will be devoted to surgical therapy and a demonstration of the results of such treatment in the patient presented today.

DR. HAWKES: Historically speaking, the attacks upon involuntary movements produced by nervous system disease probably got their start about the beginning of this century when Sir Victor Horsley did a cortical resection for athetotic movements involving an upper extremity with some success. This led to efforts to attack the Parkinsonian syndrome from the standpoint of cortical extirpation. These procedures have been directed either at the motor area itself, area 4, and adjacent portions of area

6, or against the so-called extrapyramidal cortex in the more forward portions of area 6, through which such movements are felt to be influenced.

The extrapyramidal mechanism which seem to be disturbed in the production of involuntary movements in this syndrome and many others are very complex. They consist of great relays of overlapping pathways much like a system of roads grow up across the country with its development and then are eventually replaced by a super highway which in this analogy would be represented by the pyramidal or great motor pathway. There are a series of way-stations in the cerebral cortex, in the basal ganglion of the forebrain, in the midbrain, and in the brain stem, as well as levels of control of muscular tone even at the spinal level. It is obvious that the problem is quite complex, and even difficult to see how we might successfully modify the abnormalities, by attacking any one part of the system, even assuming that we knew exactly where the abnormality lay. Efforts in the past to attack the extrapyramidal system surgically, either by cortical extirpation, by the removal of portions of basal ganglia, such as the caudate nucleus, by sectioning the peduncle or by pyramidotomy (or cordotomy of the pyramidal tract in the cervical spinal cord) have all been efforts to get the system back in balance by influencing the abnormal movements and at the same time have led to a certain amount of paralysis accompanying this. In fact, Bucy has stated that the amount of improvement in involuntary movement is largely proportional to the amount of paralysis produced. What is hoped to be gained under these circumstances is that the pyramidal voluntary function be returned to the patient after a period of time without the continued accompaniment of the involuntary movements. Therefore, extirpations of area 4 have been carried out by Bucy and his associates, extirpations of the pyramidal cortex anterior to the motor strip by Clemme and others and also efforts made to cut the U-fibers between these areas. All of these procedures are attendant with a moderate or marked degree of paralysis, and as they produce this, do stop the involuntary movements. Most patients are benefitted by

these procedures. It is a question whether the involvement of the patient is severe enough so that he should be subjected to such a method which carries a moderate mortality,—up to 17 percent in some reported series. Attacks on the caudate nucleus are perhaps not quite as formidable from the standpoint of operative risks, or production of paralysis, but in most peoples' hands it has not been too successful in alleviating the tremor to a satisfactory degree. Attacks upon the spinal cord through pyramidotomy is a fairly useful procedure which does produce considerable paralysis and is probable has its usefulness in unilateral involvement. But the same objection pertains through this whole series of methods and therefore search has continued for some better approach to the problem.

A few years ago it was discovered somewhat accidentally that occlusion of the anterior choroidal artery would produce an infarction in the basal ganglia, particularly in the region of the globus pallidus, and that this had a beneficial effect upon the involuntary movements and also on the rigidity of Parkinsonism. This fact was used to develop a technique by which this artery was occluded, by silver clips, coagulated, or divided. The procedure, however, is attendant with a difficult post-operative course with a long period of somnolence. One great problem has been in patients with bilateral involvement. After receiving a good result on one side, the operative risk in carrying out treatment on the other side has often proved to be prohibitive. This led in turn to an effort to produce a lesion in the same area by other means, and led to the development of chemopallidectomy which will be described by Dr. Schultz.

DR. ELMER C. SCHULTZ: The method of chemopallidectomy in present use was developed by Cooper and his associates working at St. Barnabus Hospital in New York City. They first utilized a temporal approach to reach the globus pallidus. A temporal burr hole was made and through a small opening in the dura a thin cannula was directed towards the midline to the region of the globus pallidus. Because of the presence of branches of the middle cerebral artery and potential vascular complications, the technique was changed to

the one employed at the present time. The patient is mildly sedated and an encephalogram is done employing 25 to 30 cc. of air. This outlines the anterior horns of the lateral ventricles including the foramen of Monro. A piece of wire is taped just anterior to the ear over the vertex of the scalp to approximate the position of the foramen of Monro. A lateral X-ray view of the skull verifies the position of the wire. Adjustments are made until the wire is in its proper position. A knife scratch is made on the scalp when the wire is in its proper position and the wire is discarded. After surgical preparation and draping of the entire scalp, an incision is made approximately 7 cm. in length along the afore-mentioned mark with its center 6 cm. from the midsagittal plane of the skull. A burr hole is enlarged to the size of a 25 cent piece. The dura is then opened and the pia arachnoid cauterized. The problem now is to introduce a polyethylene cannula having a metal stylet into the cerebral hemisphere so that its tip will lie at a point immediately posterior to the foramen of Monro, as seen on the lateral roentgenograms, and 1.5 cm. lateral to the midportion of the third ventricle, as viewed on the anteroposterior roentgenograms. To do this accurately a cannula guide is first securely fastened to the skull. The cannula is then placed in the cannula holder on the guide and advanced about 2 cm. into the hemisphere pointing the tip of the cannula at the inner canthus of the homolateral eye. An anteroposterior roentgenogram is made. The roentgenogram is then viewed by the surgeon and a line is drawn on the roentgenogram to project the path of the cannula inferiorly. This projected line should cross the position of the globus pallidus. The cannula is then gradually advanced to the position of the globus pallidus. (Fig. 1.) When the tip of the cannula lies approximately 1.5 cm. lateral to the middle of the third ventricle and just posterior to the foramen of Monro, as seen on the anteroposterior roentgenogram and on the lateral roentgenogram, the globus pallidus has been reached and the cannula is anchored in place by sewing it to the dura. The metal stylet is then removed and 1 cc. of air is injected into the cannula. Frequently the tremor and spasticity are di-



FIG. 1. Position of cannula (dotted line).

minished by this maneuver. If they persist then 0.25 cc. of 1% procaine is injected into the catheter. This causes an abrupt cessation of tremor and diminution in rigidity. Once the procaine injection has alleviated the symptoms of Parkinsonism, a permanent lesion is created by injecting a sclerosing agent. To date 95 per cent alcohol in a gelatin base, Etopalín, as developed by Ciba, has proved to be most efficacious. 1 cc. of this is slowly injected into the cannula and a polyethylene stylet with centimeter markings is placed into the cannula. The pallidectomy guide is then removed from the head and the scalp wound is closed in layers. The polyethylene cannula is allowed to remain in place. It is kept under a sterile bandage. Care must be exercised that no undue tension is placed on the catheter or that the catheter does not become bent. Two or 3 injections of alcohol at intervals of 2 to 3 days are usually necessary before the desired relief of rigidity and tremor results. After the final injection, the scalp wound is opened and the polyethylene catheter is removed.

The mortality rate from this procedure at the present time is slightly less than 3 per cent. The morbidity rate is approximately 5 per cent. This usually results from cerebral thrombosis following injection of alcohol. In the older age groups periods of confusion, profuse sweating, hyperpyrexia, somnolence, and negativism during the first

few weeks post-operatively, are common. The results obtained by this method are superior to past surgical procedures.

DR. HAWKES: The results of this procedure as carried out in our patient for discussion today will be presented by the neurosurgical resident, Dr. Crowder.

DR. RICHARD CROWDER: This operation was performed on the 24th of October, by Dr. Tyrer, according to the technique just described.

Immediately postoperatively there was very little, if any, change in the spasticity or tremor. On the day following the operation the tremor was considerably improved and there was less rigidity. There was no evidence of weakness of the extremities but there was a moderate facial weakness, and the patient complained of some additional difficulty in speech, in which he stated that he had trouble finding the word that he wanted to say. On the 26th, the patient's condition continued to improve somewhat, although the facial weakness persisted, and an additional 0.5 cc. of alcohol solution was instilled through the cannula. Following the second injection, there was no evidence of weakness, the rigidity was considerably improved, and the tremor was considerably improved. There was still, however, moderate facial weakness and difficulty with speech, so that the third injection was deferred until the first of November. Before each injection was made repeat X-rays were taken to show the position of the needle and there was no significant change in the position. On the 1st of November, the third injection of 0.5 cc. was instilled, following which there were no complications. The speech difficulty improved somewhat daily, and the tremor is considerably improved.

DR. HAWKES: The procedure and particular problems in regard to this particular patient will be discussed by Dr. Tyrer.

DR. A. ROY. TYRER: As the term implies, the intent of chemopallidectomy is to destroy the globus pallidus area by injecting a destructive chemical solution. At the present time the solution being used is alcohol in a gelatin base, the latter decreasing the defusion of alcohol. An important consideration is the fact that this is a precision procedure. The needle must be introduced into the proper area, and if introduced into

any other area, not only is the desired benefit not obtained, but undesirable side effects almost certainly will result. The globus pallidus area is roughly the size of a dime, or by actual measurement is approximately 1.2 by 0.9 by 0.9 cm. in size. Utilizing a pneumoencephalogram, the area can quite accurately be localized, and by means of X-ray control the point of the needle is introduced into this area. It has been conclusively shown that a single injection of alcohol into the globus pallidus will not produce a lasting result. This patient has had three injections, 0.5 cc. each, which is approximately the average required. To accomplish the multiple injections once the needle is introduced into position, it is fixed in place, and so maintained for 7 to 10 days, during which time the additional injections are carried out at intervals of 2 to 3 days. One would immediately presume that infections might be common with a technique of this type, but surprisingly this has been no problem.

This patient I feel has what we might term a quite satisfactory result. By his own estimate he states that he is 75 per cent improved. You will observe that at rest the patient has virtually no tremor in his right arm or leg. He demonstrates the least bit of right facial weakness which is present in nearly all of these patients for a brief period, but this usually completely clears. Virtually all of these patients under emotional tension will have return of the tremor to some degree, and this patient demonstrated this, as you observed, when he was brought into the room. As he became acclimated to his surroundings and the atmosphere of this conference, the tremor completely disappeared. Now, as you approach to examine him, the tremor reappears momentarily, but then disappears as he adjusts to the situation.

It seems well established at this time that chemopallidectomy is the treatment of choice for Parkinsonism, when the disease is sufficiently severe as to be moderately disabling. The relative dangers and risks of the procedure have been mentioned. They are by no means great, but like any intracranial procedure, there is a calculated

morbidity and mortality. The principal problem relates to hemorrhage in the area of brain destroyed. Since the alcohol is not selective for merely the nervous tissue, but effects blood vessels alike, there exists potential danger of hemorrhage from erosion of a vessel, particularly if the brain needle is manipulated to any degree. The point to be emphasized, however, is the fact that this hazard is not great, and probably does not present itself in more than three to five per cent of the patients treated.

A point worthy of emphasis is the fact that if failure occurs on the initial attempt to alleviate symptoms on a patient of this type, a second procedure certainly is to be contemplated, or even rarely a third procedure, if necessary, to accomplish the desired result. Multiple procedures have not been required in many cases in Dr. Cooper's series, but in a few instances this has been necessary, and the patient finally enjoyed a satisfactory result. I might say that these Parkinsonism patients are among the most grateful I have treated, and on occasion when I personally wasn't too satisfied with the result obtained, the patient nevertheless was delighted.

DR. HAWKES: Dr. Schultz, do you have any further comments? Dr. Lasater?

We have, then, presented a recently developed technique for the treatment of the Parkinsonian syndrome through a method of lysis of the globus pallidus. Attempts to employ electrosurgical techniques have also been used elsewhere particularly by Wysis in Philadelphia. In general it is difficult to obtain apparatus that will deliver a constant enough coagulating current to produce reliable effects in this manner. Possibly, an ultrasonic beam may be employed at some future date to produce lesions in the globus pallidus. The fact that these patients live for long periods of time, have very distressing symptoms, and may become incapacitated and still go on for long periods of time have been the stimulæ for the efforts which we have reviewed to obtain for them some relief beyond what is possible by medical control. We hope that this method may present a satisfactory answer to the problem.

CLINICOPATHOLOGIC CONFERENCE

Vanderbilt University Hospital*

Adrenal Tumor

Clinical History. A 50 year old colored woman was admitted into the Vanderbilt University Hospital complaining of dull pain in the left lumbar area of 5 weeks' duration. This pain had occurred gradually, was mild and constant and was relieved slightly by lying down. There had been no nausea, vomiting, anorexia or change in bowel habits. There had been no trauma to the abdomen. The patient thought that she had lost a slight amount of weight. She had been told two years previously that she had a tumor of the uterus.

Examination. The patient's temperature was 99.6, pulse 78, respiration 18 and blood pressure 150/90. She was well developed and well nourished and in no apparent distress. There was no enlargement of the lymph nodes. The heart and lungs were normal. The abdomen was slightly protuberant. In the left upper quadrant there was a mass which extended from the costal margin to the umbilicus and slightly across the midline. The mass was smooth, firm, nontender and moved with respiration. Change in position did not affect the location of the mass. Pelvic examination disclosed a myoma 8 cm. in size arising from the corpus uteri and extending to the right.

Urinalysis revealed a 1+ glycosuria. The hemoglobin was 13 Gm. and the white blood cell count 7600 with a normal differential picture. NPN was 25, FBS 126, and serum proteins were albumin 4.1 and globulin 2.2 Gm. per 100 cc., bilirubin 0.5 mg. per 100 cc., Amylase was 48 units, Blood Kahn was negative. A glucose tolerance test demonstrated a diabetic type of response.

A barium enema demonstrated the splenic flexure to be depressed inferiorly and revealed an homogeneous density occupying the left upper quadrant. An intravenous pyelogram showed depression of the left kidney. A gastrointestinal series revealed a filling defect on the lateral aspect of the body of the stomach with medial and anterior displacement of the stomach.

Several days after admission an operation was performed.

Discussion

DR. BARTON McSWAIN: "A 50 year old colored female was admitted to the hospital complaining of dull pain in the left lumbar area of 5 weeks' duration." What organ is immediately suggested to you?

STUDENT: The kidney.

DR. McSWAIN: "This pain had occurred gradually, was mild and constant. The pain was relieved slightly by lying down." That makes one think of aneurysm of the abdominal aorta and of carcinoma of the pancreas but the pain of the latter is worse when the patient lies down. "There had been no nausea, vomiting, anorexia or change in bowel habits. She denied any trauma to the abdomen." If there had been trauma, what lesions might have occurred?

STUDENT: Rupture of the spleen or false pancreatic cyst.

DR. McSWAIN: "The patient thought that she had lost a slight amount of weight. She had been told previously that she had a tumor of the uterus."

"The patient's temperature was 99.6, pulse 78, respirations 18 and blood pressure 150/90. She was well developed and well nourished and in no apparent distress. There was no enlargement of the lymph nodes. The heart and lungs were normal. The abdomen was slightly protuberant. In the left upper quadrant there was a mass which extended from the costal margin to the umbilicus and slightly across the midline. The mass was smooth, firm, nontender and moved with respiration. Change in position did not affect the location of the mass." The foregoing statements suggest what to you?

STUDENT: First, the spleen. Although there were no enlarged lymph nodes, the spleen still might have been enlarged because of primary malignant disease of the lymphoid tissue of the spleen.

DR. McSWAIN: "Pelvic examination disclosed an 8 cm. myoma arising from the corpus and extending to the right." It is possible, but highly unlikely, that a pedunculated leiomyoma of the uterus or an ovarian cyst with a very long pedicle could give rise to a mass in the left upper quadrant of the abdomen.

"Urinalysis revealed a 1+ glycosuria." A fairly high percentage of patients with pancreatic cysts have mild to moderate diabetes. "The hemoglobin was 13 Gms., white blood cell count 7,600 with a normal differential, NPN 25, FBS 126, TSP 4.1/2.2, bilirubin 0.5 mgm., amylase 48, Kahn negative. A glucose tolerance test demonstrated a diabetic type of response." The laboratory examinations

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apparently rule out the presence of an enlarged spleen in conjunction with a cytopenia. However, the platelet count was not given. The spleen in thrombocytopenic purpura is usually not as large as was this mass.

"A barium enema demonstrated the splenic flexure to be depressed inferiorly and a homogeneous density occupying the left upper quadrant." If the mass were a tumor of the colon, it would be unlikely to be a carcinoma. However, it could be a leiomyoma. "An intavenous pyelogram demonstrated depression of the left kidney." Such a finding could be caused by a tumor of the kidney or of the adrenal. However, if it were an adrenal tumor, it would have to be a nonfunctioning one. "A gastrointestinal series demonstrated a filling defect on the lateral aspect of the body of the stomach with medial and anterior displacement of the stomach." A carcinoma of the stomach would not produce this picture but a leiomyoma might.

DR. McSWAIN: Do you think of any other possibilities?

STUDENT: A mesenteric cyst. Also some type of retroperitoneal tumor.

DR. McSWAIN: Another possibility is a tumor of the diaphragm, such as a rhabdomyoma, but nothing could be more unusual. Diagnoses which we cannot rule out are tumor of the kidney, adrenal, stomach and colon and pancreatic cyst. Which do you think is most likely?

STUDENT: Pancreatic cyst.

DR. McSWAIN: I, too, think that a true pancreatic cyst is the most likely possibility.

DR. JOHN SHAPIRO: I think a description of the operative findings in this case will be of interest. When the abdomen was opened a tremendous retroperitoneal tumor was found occupying the left upper abdomen. This displaced the colon forward and down as far as the umbilicus, the stomach and spleen medially as far as the aorta, and the left kidney inferiorly as far as the left iliac crest. The tumor was separate from the left kidney and was compressible, ovoid and appeared encapsulated with numerous large vessels over its surface. The tumor was removed though it was felt by the operator that some tumor

extended beyond the limits of removal in one area.

The tumor was ovoid in shape and seemed to be surrounded by a fairly dense capsule, though at one point the capsule had been ruptured. It weighed 1800 grams and overall measurements were 22 x 15 x 11 cms. It was soft and on cut section the surfaces bulged. The cut surface presented a variegated appearance with areas of hemorrhage and yellow necrotic areas. It was impossible to identify any remnant of adrenal gland in the mass. The microscopic sections showed many areas of necrosis and small accumulations of vacuolated cells with good resemblance to adrenal cortex, though the cells were obviously neoplastic. Many other areas showed marked pleomorphism of cells and mitoses were abundant. It was felt that the histologic picture indicated without doubt a diagnosis of carcinoma of the adrenal cortex.

We cannot make a statement as to the functional activity of this or other adrenal cortical tumors on the basis of histologic examination. Certain changes have been described which were thought to indicate functional activity in such tumors, but this correlation has not stood up under critical evaluation. It is of interest to note that a followup on this patient revealed her to be living and apparently free of recurrence or metastases five years after the surgical removal of the tumor. This patient did receive radiation following her operation, and though these cortical carcinomas of the adrenal do not ordinarily respond to radiation therapy, benefit may have been achieved in this case, by such treatment. This is particularly likely inasmuch as it was felt that a tumor was left in situ at the time of operation.

I thought it might be of interest to have Dr. Grant Liddle discuss the functional activity of tumors of the adrenal cortex and the clinical and laboratory evidence of such activity.

DR. GRANT LIDDLE: Non-functioning tumors of the adrenal cortex are decidedly rare and are extremely difficult to diagnose clinically. Since they produce no signs of hormonal disturbance they rarely come to the attention of the clinical endocrinologist. Furthermore, since they arise in a location

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

**See Special Article in
This Issue on Medicare**

Medicare Program Is Full-Service Coverage

● It has been mis-understood by some physicians that the Dependents Medical Care Act (Medicare, Public Law 569) is not one of full-service coverage.

It is intended that civilian medical care authorized under Public Law 569, will be on a basis comparable to that provided in uniformed services medical facilities. Except for specified amounts to be paid by the patient, the services which are provided under the law will be furnished by physicians participating in the program who will receive payment in full from the Government in accordance with the published schedule of fees, which has been furnished to all physicians in Tennessee. In other words, the fee schedule is for full-service coverage, except where otherwise specified in the fee schedule.

Report on Actions of AMA House of Delegates, Seattle, November 27-30, 1956

● Major AMA policy adopted by the House of Delegates at the Clinical Meeting were as follows:

1. PRINCIPALS OF MEDICAL ETHICS—This was the most important item discussed. The ten-point "short form" revision was recommitted for additional study. Practically all of the delegates were dissatisfied on (1) division of fees, (2) dispensing of appliances and drugs, (3) corporate medical practice, and (4) physician-patient relationship; all of which were not fully enough explained in the revision.

2. VETERANS MEDICAL CARE—Delegates voted unanimously to revise the four-year old AMA policy to provide care only for veterans in VA and other federal hospitals - whose disabilities or diseases are service incurred or precipitated. It was the consensus of the House that non-service connected disability should be discontinued.

3. RADIOACTIVE ISOTOPES—This subject had long-range importance to the House. The 1951 policy limiting hospital use of radium and radio-active isotopes to board certified radiologists was rescinded. From now on, diagnostic and therapeutic use of these radiation materials under the newly recommended policy should be under a hospital staff committee made up of a radiologist, surgeon, internist, gynecologist, urologist and pathologist.

Miscellaneous Actions

● A number of miscellaneous actions were handled by members of the House. They included new guides for maternal and mortality studies - admission of alcoholics to hospitals, recognizing alcoholism as a disease - requested the Joint Commission on Hospital Accreditation to act against any hospital excluding or arbitrarily restricting general practitioners regardless of competence - ordered a study on divorcing the scientific session from the House of Delegates at the Clinical Meeting, the House to meet regularly at Chicago.

Other actions recognized officially the American Association of Medical Assistants and still another encouraged all physicians to participate in policy-making of prepaid medical care plans where under doctor sponsorship.

Report Election of County Society Officers

● Most County Medical Societies elect officers for 1957 during the months of December or January. It is important that this information be sent to the office of the Executive

Secretary, 112 Louise Avenue, Nashville. County Society officials can then be listed and the information forwarded to interested individuals and groups.

**Delegates to House
of Delegates Should
Be Forwarded Also**

● In addition, delegates and alternates should be named at the same time of the officers. Delegates should receive advance information on subjects to be conducted; they are candidates for appointment on reference committees. Early election insures consideration, and makes it possible for this office to keep the House members informed on important matters.

**TSMA Sponsored
Postgraduate Education
Program for 1957
(Subjects-Places-Dates)**

● The following programs will be presented by the TSMA Postgraduate committee, throughout the state during 1957.

PEDIATRICS—ACUTE INFECTIOUS DISEASES AND THEIR COMPLICATIONS IN CHILDREN

Panel: Pediatrician, Clinical Pathologist, Dermatologist		
District 1	Greeneville	March 26
District 2	Oak Ridge	March 27
District 3	Cleveland	March 28
District 4	Cookeville	February 18
District 5	Murfreesboro	February 19
District 6	Springfield	February 20
District 7	Pulaski	February 21
District 8	Paris	March 12
District 9	Brownsville	March 13
District 10	Memphis	March 14

OBSTETRICAL COMPLICATIONS—MEDICAL COMPLICATIONS, OBSTETRIC Hemorrhage, Toxemia

Panel: Obstetrician, Internist, Hematologist		
District 1	Johnson City	June 25
District 2	Maryville	June 26
District 3	Chattanooga	June 27
District 6	Clarksville	May 20
District 7	Columbia	May 21
District 5	Tullahoma	May 22
District 4	Cookeville	May 23
District 8	Jackson	May 14
District 9	Union City	May 5
District 10	Memphis	May 16

THE ACUTE HEART—MANAGEMENT OF ACUTE HEART DISEASES AND CO-INCIDENTAL SURGERY ON THE ACUTE CARDIAC PATIENT

Panel: Internist, Pediatrician, Surgeon		
District 1	Kingsport	October 29
District 2	Knoxville	October 30
District 3	Athens	October 31
District 7	Dickson	September 16
District 6	Nashville	September 17
District 5	Fayetteville	September 18
District 4	Cookeville	September 19
District 8	Dyersburg	October 8
District 10	Memphis	October 9
District 9	Bolivar	October 10

**Contact Your
Congressman
(State or National)**

● Many doctors took the opportunity of talking with their state and national representatives while the Congressmen were home. If you did not do so, be sure and keep in touch with your state representative as well as those in Congress in Washington. It affords you an excellent opportunity to renew your acquaintance and impress upon your representatives your interest in state and national legislative affairs and what they can do about them. If your representatives were newly elected, your contacts will give you the opportunity to congratulate them upon election. They will appreciate your interest.

Public Service

THE TENNESSEE TEN

Legislature Convenes

● The Tennessee State Legislature will have convened January 7th as this first Tennessee Ten yellow page for 1957 goes to press. Some of the highlights of this Legislature will be as follows:

Indigent Program Due Major Increase

● HOSPITALIZATION FOR THE INDIGENT is due a major increase, and, may, in fact, outstrip the expectations of all the groups sponsoring the program, including the medical profession. If arrangements can be made to relieve \$500,000 in Welfare Department funds from other commitments, it is almost a certainty that this money will be matched with Federal dollars to give welfare recipients of the indigent hospital service \$1,000,000 annually. Non-welfare recipients will enjoy a major increase in hospital service with state and county funds under the original program.

Administration Shows Strong Interest

● State Comptroller Ed Bolling and Governor Frank G. Clement have both expressed a strong interest in getting more indigent hospital service for the indigent in Tennessee. They have also made it clear that the medical profession in this state will remain in charge of the indigent hospital service program. All funds put into the program, with state or federal aid, will be administered through the Department of Public Health.

New S.S. Law Could Make More Money Available

● The new U.S. Social Security expansion under Public Law 880 makes federal money available on a matching basis to hospitalize people on the welfare rolls. Tennessee's indigent hospital service has been caring for this group as well as non-welfare indigents. Acquisition of the federal money will relieve up to eighty percent of the burden now on the State-County program and will allow more hospital care for the medically indigent. Florida has already set up machinery to take advantage of the new Federal law.

Out-of-State Accident Victims

● A HOSPITAL LIEN LAW to make possible the attachment of accident insurance settlements to pay the hospital bills of highway accident victims shows good promise of passage. The situation to date has been that out-of-state travellers given hospital care following automobile accidents have left the hospital without paying their bills and in spite of the fact that many of these collect thousands of dollars in insurance settlements. The hospitals feel, and justly so, that these people should pay their bills. A lien law will make it possible to attach insurance settlements for the amount of the hospital bill.

Autopsy Law To Stop Crime

● A MEDICAL EXAMINER SYSTEM to supplement the work being done by coroners will be proposed with a strong possibility of passage. Leading pathologists have stated that getting away with murder under the present system is possible.

Cooperation Expected

● Lawyers and district attorneys are expected to cooperate in the introduction of a measure which would make examination by a competent medical doctor mandatory in all cases in which there had not been medical attention within twelve hours preceding death.

**Present Law
Awkward**

● Under the present set-up, the coroner, very often a leading citizen, but in nearly all cases a person with no medical training, is called on to decide whether there has been foul play in case of death. His decision is often enough to prevent further investigation. Getting an autopsy performed in suspected cases is extremely awkward, sometimes impossible, authorities report.

**Lobby Expected
to Fight
Fireworks Control**

● A BILL TO CONTROL THE SALE OF FIREWORKS is certain to meet strong opposition from the fireworks lobby. Indications are that fireworks dealers and manufacturers are prepared to spend thousands of dollars this year in an all out effort to defeat proposed legislation which would prohibit the sale of fireworks in Tennessee except for public displays.

**Deaths Have
Resulted—
T.P.A. Favors**

● Serious injuries to children and adults alike result each year from fireworks. In addition, there have been cases in Tennessee in which death has resulted from fireworks. The medical profession is leading the crusade for a model fireworks law such as has already been passed by thirty-eight states. The Tennessee Press Association is also strongly in favor of such a law and there is a good chance that Tennessee will enact a measure which would be worthwhile if it succeeded in saving the eyesight of but a single child. The statistics show that such a law would protect thousands.

**Speech and
Hearing**

● A BOND ISSUE FOR SPEECH AND HEARING CENTERS will be requested in order to expand the services of this state program. Statistics show that ten percent of our children have speech and/or hearing difficulties. Of this group ninety percent can be helped by training such as this program offers.

**Cultists
Active**

● As always, there are certain to be bills introduced in this session which would have a bad effect on health and medical care for Tennesseans. The cultists will be actively working toward expanded privileges in the area of medical treatment. There is no predicting what guise these bills will take, but it is hoped that a sympathetic Legislature and a wise administration will prevent any measures which would endanger the health of our people from becoming law.

**Good
Citizens**

● Congratulations are due the many physicians who are proving the contention of the Tennessee State Medical Association that "Good physicians are good citizens."

**Good
Response**

● Literature listing the four major planks in the TSMA legislative program have been sent to specific doctors asking that they contact specific representatives and discuss these measures with them. The response has been most gratifying.

**Editors
Cooperative**

● Thanks are also due to those who have brought our legislative program to the attention of their local news editors. The clipping service has shown more than 100 editorials and many times as many news stories on the TSMA proposals.

**Effective
Public Service**

● The Tennessee State Medical Association now has a cadre of physicians working actively to promote our projects in each community with newspapers and/or radio and television stations. These contact persons are making the most effective promulgation of the Public Service program ever achieved in the history of the Association.

which is inaccessible to the examining physician they must become extraordinarily large before they are detectable by virtue of their mass.

It is important to recognize that carcinomas of the adrenal cortex may produce a variety of endocrine disturbances. These tumors may secrete predominantly hydrocortisone producing a picture of Cushing's syndrome. They may produce predominantly androgenic steroids producing a picture of virilization. Occasionally they produce large quantities of aldosterone which results in the now well recognized syndrome of hypertension with hypokalemic alkalosis. All combinations of these pictures may also be produced. In addition to qualitative variations among the clinical pictures there are all degrees of severity ranging from very florid clinical syndromes to very slight sub-clinical abnormalities.

It might be interesting to look back at this case, now that we know what it is, to see if there is any possible way in which the diagnosis could have been made prior to operation. I should like to emphasize at the outset that if the tumor actually was completely nonfunctioning (a possibility which cannot now be tested) there is no way by which our studies of adrenocortical function could have assisted in making the correct anatomical diagnosis. However, if it can be considered that the tumor was functioning at a level sufficient to produce a very mild syndrome or even at a level equivalent to that of normal adrenal secretion, I think we do now have tools which would enable us to predict with some confidence the presence of an adrenal tumor. Let us imagine that the presence of mild diabetes, mild hypertension, "abdominal protubance" and the radiological finding that the left kidney was displaced downward had suggested to someone the possibility of an adrenocortical abnormality. Faced with such a problem at the present

time we would carry out the following tests. We would collect urine for 17-hydroxycorticoid and 17-ketosteroid determinations for five successive days. The first two days would serve as controls. On the third day we would carry out a standard ACTH test in which 50 units of ACTH was infused intravenously over an eight hour period. On the fourth and fifth days we would administer delta 1-9 alpha-fluorohydrocortisone in oral doses of 0.5 milligrams every six hours.

If our patient had a strictly nonfunctioning adrenal carcinoma we would observe only the responses of her normal adrenal tissue. Control levels as 17-hydroxycorticoids, for example, would be between 4 and 10 milligrams per day. They would rise to 20 to 40 milligrams per day in response to standard ACTH test and they would fall to less than 2 milligrams per day when endogenous ACTH was suppressed by the administration of delta 1-9 alpha-fluorohydrocortisone.

On the other hand if this patient's adrenal tumor were functioning, steroid values might be somewhat elevated during control days. A carcinoma would almost certainly have shown no response to the standard ACTH test and there would have been no suppression of steroid excretion during administration of delta 1-9 alpha-fluorohydrocortisone. In short, the picture of absolute physiological autonomy of the steroid producing mechanism would have led us to suspect very strongly the existence of an adrenocortical tumor, probably carcinoma.

DR. SHAPIRO: The patient's diabetes persisted after the removal of the tumor so I think we can assume that her diabetes was not related to functional activity of the tumor.

Final Diagnosis

Cortical Adenocarcinoma of Adrenal Gland.

President's Letter



DR. WOOD

The medical profession ever alert (we hope) for those developments affecting the health of their patients, is having some difficulty in helping to advise their clientele regarding the purchase of hospitalization insurance.

They are unanimous in their opinion relative to the need of protection against the costs of hospitalization, but the rapid recent developments with all the ramifications have been somewhat confusing. It is probably expecting too much of a physician to be proficient in this administration to his patients. He is aware that the principle of many people making payments into a pool will provide protection to the family who will need funds as a result of having suffered the expected illness against which he was insured. He is also aware there are definite advantages to the voluntary type of system and that the competitive incentives will serve to stimulate the presentation of widely varying types of insurance contracts which will satisfy the individual purchaser's needs or desires.

In the past and perhaps still too frequently noted in the present era, the physician is aware of certain objectionable features in policies written for those needful of and desiring hospitalization or health insurance protection. Such objections usually arise because of misunderstanding on the part of the insured as to what he is actually protected against. This in turn arises from the fact that the sales representative did not elaborate and the insured failed to read the policy, particularly the exceptions—usually denoted as the "fine print." Further objections consist of automatic cancellation of a policy on termination of insured employment, or the termination by the insurer of the health contract following an illness that was likely to recur.

The justification of this criticism is denied by Insurance Companies and while unlikely in group insurance contracts, the individual and family policies still contain too many limitations.

Over insurance is often complained about by Insurance Companies and the necessity for this by some of the insured. It occasionally pays to be sick but some of these instances result from the fact that both husband and wife working at different plants, become doubly insured. Again, an employee with group coverage, realizing they will lose protection on job termination, will seek coverage through other companies because they can carry on this protection as individual carriers. The Co-insurance principle is apparently the answer to this problem or better yet some change to types of coverage such as offered by Blue Cross.

In advising health insurance, the family's ability to meet the costs of illness without insurance should be evaluated. If insurance is needed, the family's ability to meet the premiums are determined and adjustment made to reconcile the expendable portion of income for the determined needs. Qualified insurance representatives are usually needed in this advisory capacity.

Study of hospital costs reveals a steady increase. In 1946 the average daily cost was \$9.39, by 1956 this has risen to over \$22.00. In 1900 the average length of hospital stay was 40 days, in 1946 it was 9.1 days and in 1953 it dropped to 7.3 but rose to 7.45 in 1955. No longer is the unit of care yielding results quickly enough to overcome the increased costs of the unit of care. The length of stay has been reduced to 16.6% but the hospital bill has increased 99%. Expensive procedures are now spread over fewer and hence more costly days. Reduction in length of hospital stay has also reduced the utilization of beds and with increasing labor costs, the added diagnostic and therapeutic techniques, all point to ever increasing hospital cost.

Already over 100,000,000 people in the U. S. are covered by insurance. 51,000,000 members were enrolled in Blue Cross in 1955—a truly remarkable record of 86 Blue Cross plans whose birth was recorded only 25 years ago and who are proud that 91.34% of money received is expended in hospital payments.

R. B. Wood M.D.

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JANUARY, 1957

EDITORIAL

TOXICITY TO DRUGS

As the number of drugs available to the medical profession increases, certain new problems arise. The problems of drug toxicity may in certain instances be more complex than the diagnosis and treatment of disease. Many doctors are being sued these days for accidents that occur in treatment with drugs, and all physicians would like to know how to avoid such catastrophes. It is very difficult to explain high fever or severe urticaria from a drug to a patient; it is almost impossible to explain a fatal anaphylactic reaction from the use of a drug to the next of kin.

Skin tests are of little value in determining whether a patient is sensitive to an antibiotic. Many therapeutic agents can produce hematologic damage. Unfortunately we cannot always prevent these accidents by sequential blood counts, since it is not

uncommon for a patient to have a normal blood count early in the day and develop severe agranulocytosis that night.

We cannot select our patients and recognize which ones will be sensitive. There is no way of determining in advance who will respond in a bad way to a therapeutic agent. As a cause of asthma and rhinitis, aspirin is by far the most important offender among the drugs. In susceptible individuals extremely severe asthma may result from ordinary doses. Attempts to perform scratch or intracutaneous tests with aspirin on such individuals are both futile and dangerous since they may produce violent asthma without showing any local reaction. Unfortunately there are no animal experiments that can be used to determine what certain drugs will do in man.

All patients eventually will show the depressing effects of urethane, Myleran, 6-mercaptopurine and radiation. We know most patients will take many of the commonly prescribed drugs without any untoward effect. However, who can tell whether his patient will get severe enterocolitis after a tetracycline, agranulocytosis after antihistaminic drugs, nephrosis after bacitracin therapy, heart failure from sodium retention following rauwolfia, or a psychosis from steroids?

Almost every drug in our therapeutic armamentarium is potentially dangerous. This does not mean that physicians must be nihilistic in regard to the use of drugs, nor must they deprecate new discoveries in the field of therapeutics. Where a potent therapeutic agent is needed, an appreciation of the dangers which may occur will call for a careful blood count prior to treatment to be followed by frequent blood examinations as well as a careful appraisal of the physical status for hemorrhagic phenomena, sore throat, fever and arthralgias as well as skin eruptions, hepatitis and neuropathies. Much has been said about the use of potentially dangerous agents for treatment of minor disorders. Certainly the majority of toxic drug reactions would not have occurred if the risk of the disease had been weighed against the potential dangers of the drug used.

A. B. S.

TENNESSEE MIGHT ADVISE

Among the problems facing administrators of Public Welfare funds are certain medical ones which often are difficult of resolution on a local level. It is surprising that this great disbursement of funds which has run into the millions of dollars over the years has had such inadequate medical assistance.

Now it appears that the Indiana State Medical Association has made a recommendation to the Social Security Administration relative to this subject.¹ It is also said that the A.M.A. Board of Trustees has a similar recommendation under study.

It seems that the Indiana plan would consist of the establishment of "district or county committees of physicians to review individual doctor's medical findings under the new law providing O.A.S.I. payments to disabled at age 50." Such a committee would review the physician's report, would carry out further examinations if necessary, arrive at a final decision and would decide whether rehabilitative measures would reverse the disability. The Indiana proposal "would (a) afford an unbiased medical review of the case, (b) remove family and possibly political pressure from the physician, and (c) provide the state agency with a more factual and comprehensive report than it would otherwise obtain, 'which should be of great assistance in making the final determinations as to disability payments.'"

The Tennessee Department of Public Welfare has had a half dozen years experience in requesting cooperation of the medical profession in the administration of its affairs which bear on medical problems. Though some aspects of the Aid to Dependent Children program date as far back as 1910, the Federal Social Security Act of 1935 provided for the matching of federal funds by states for public assistance to: (1) needy persons over 65 years of age; (2) the needy blind; (3) needy children who are deprived of parenteral support by reason of death, absence from the home, or the physical or mental disability of the parent. In 1937 Tennessee passed the legislation to partici-

pate in these programs. From the time of enactment of the A.D.C. Act in 1937, until 1950, assistance to children was given on certification of disability of the wage-earner by a physician. In June, 1950, the Department of Public Welfare began to provide for more complete medical examinations to determine disability. In August, 1951, the Department chose a part-time Medical Consultant, an internist, to assist in the A.D.C. program. This Consultant with members of the Department began an analysis of the medical problems related to A.D.C.

As a result of this experience the Commissioner of Public Welfare formed a State Advisory Committee to the Department. Dr. Ernest Kelly, then president of the T.S.M.A., appointed three members of the State Association who, with a representative of the Vocational Rehabilitation Division, and Employment Security made up the Committee. It met first in April, 1952. It recommended formation of a Medical Review Board which was selected from a panel of the profession submitted by the Nashville Academy of Medicine,—two internists, one general and one orthopedic surgeon.

The accomplishments of the early months of this Medical Review Board have been published.² The A.D.C. case load in September, 1950, was 25,902 families with a monthly cost of \$1,238,112.00. Of these cases, disability was the cause of deprivation of parental support in 48 per cent (12,433 families) of the total case load.

In reporting to the House of Delegates in 1955,³ the Committee reported that the Medical Review Board had reviewed 7,602 A.D.C. cases and 2,788 Aid to the Disabled Cases. Of the A.D.C. cases 67 per cent were approved for disability. As of February, 1955, 5,874 families were receiving A.D.C. grants due to the disability of the breadwinner, at a monthly cost of \$384,218.00. (Compare this with the preceding paragraph.) This represented 27 per cent of the total A.D.C. load.

The contribution of the Medical Review Board to the Department of Public Welfare and to the taxpayer has been tremendous. Obviously, the objective of the Medical Re-

²The Aid to Dependent Children Program. J. Tennessee M. A. 46:104, 1953.

³Report of the Liaison Committee to the State Department of Public Welfare, J. Tennessee M. A. 48:177, 1955.

¹A.M.A. Washington Letter (84-103) Dec. 28, 1956.

view Board is *not* to save money; its objective is to aid in the assistance being given to the *truly disabled* and to urge rehabilitative measures to again make the recipient a productive, self-respecting citizen of the community. Thus, the Board has met the Indiana objective to "(a) afford an unbiased review of the case." Furthermore, it has been a buffer between the local physician and local pressures, meeting the Indiana objective to "(b) remove family and possibly political pressure from the physician." The local doctor may be backed into an untenable corner when the soft-hearted ladies' aid of the church, feeling sorry for an improvident "gold-bricking" father of ten children and having a "backache" which makes work impossible, urges certification of a "disability." Or the improvident diabetic, of better health when active, may have their sympathy to place the local doctor under uneviable pressure to get A.D.C. for his children. All of us have seen case after case of this type either in practice or in our hospital clinics.

This is an ever-increasing problem as more and more federal and state funds are poured out in public assistance. The latest assistance to these very same groups was the subject of a recent editorial.⁴ An unbiased doctor or group of doctors must be on hand to decide medical problems for the lay administrators who wish to do a good and honest job of disbursing public funds to help the deserving, and at the same time to aim for a self-reliant populace which scorns a panhandler.

The Department of Public Welfare of Tennessee has been a pioneer in seeking advice from the medical profession. It has had a satisfying experience. Let Indiana, the Social Security Administration and the A.M.A. profit from its experience.

R. H. K.

Special Item

Extent of Medical Care to Which Dependents Are Entitled

There seems to be some misunderstanding in medical circles relative to the extent of medical care to which dependents are en-

titled under Public Law 569, the Dependents Medical Care Act. All doctors of Tennessee have received a copy of the fee schedule and a doctor's manual setting forth the information on how the program is operated.

In order to clarify matters further, the following is for your information.

In military facilities, medical care is limited to the following: Diagnosis, treatment of acute medical conditions, including acute phases of chronic diseases; surgical conditions; contagious diseases; immunization; obstetric and infant care; other acute emergencies (temporary treatment); dental care only to relieve pain and suffering, or as a necessary adjunct to medical or surgical treatment, or in the United States where adequate civilian dental facilities are not available.

Medical Care is not authorized in military facilities for the following: Chronic diseases; nervous and mental disorders; elective medical and surgical treatment, such as cosmetic surgery; domiciliary care; prosthesis, except that overseas and in remote places in the U. S. these items may be supplied at cost; ambulance service except in emergencies; home calls (except if determined to be medically necessary); dental care except as noted above. (Exceptions allowed in special and unusual cases.)

In civilian facilities, medical care is limited to the following: Acute medical conditions, including acute phases of chronic diseases; surgical conditions; contagious diseases while in hospital; complete obstetrical and maternity care; 365 days' hospitalization (semiprivate accommodations) for each admission, including all necessary services and supplies by hospital; prehospitalization and posthospitalization services of doctor for bodily injury or surgical operation, including certain tests; acute emergencies of any nature if threat to life, health or well-being, including temporary treatment of acute emotional disorders; diagnostic tests and procedures during hospitalization.

Payment by the government also is authorized for treatment of certain bodily injuries and a limited number of tests in connection with them when there is no hospitalization. Specifically, payment is authorized for diagnostic tests and procedures

⁴Editorial. Let Us Think Before We Decide, J. Tennessee M. A. 49:432, 1956.

for treatment of fractures, dislocations, lacerations and other wounds as prescribed in local schedule of allowances. In such cases when the patient is not hospitalized maximum government payment authorized is \$75 for laboratory tests, pathologic and radiologic examinations. Use of hospital outpatient facilities, such as a cast room, for treatment of injury also is authorized.

Medical care is not authorized in civilian facilities for chronic diseases (except acute exacerbations and complications); nervous and mental disorders; elective medical and surgical treatment; domiciliary care; treatments or procedures normally considered to be outpatient care. (Exceptions allowed in special and unusual cases.)

Note: While hospitalization in civilian facilities is limited to 365 days, dependents requiring hospitalization beyond this time will be transferred to service hospitals or the government may authorize payment for their continued care in the private hospital. Payment for drugs and materials outside hospital not authorized, except those dispensed by physicians to patients in his office in connection with treatment of injury.

Limitation on Choice of Facility by Dependents

At the outset of the program, spouses and children of active duty members (the only dependents eligible for both civilian and military care) will have free choice between civilian and military care. However, this limitation can be invoked later, if it is shown that use of civilian medical facilities by dependents in a certain area has affected adversely the optimum economic utilization of service facilities; the Secretary of Defense (or of HEW) may then restrict dependents in that area to care in a service facility. In defining such areas, the secretary must take into consideration normal commuting time, distance and unusual geographic and transportation factors. Wherever imposed, this restriction on freedom of choice may be waived in an emergency, and under any circumstances spouses and children of active duty members will retain freedom of choice between service and private facilities if they are not living with the service person on whom they are dependent.

Identification of Dependents and their Admission to Benefits

Dependents will be identified by a "Dependents' Authorization for Medical Care" card (DD Form 1173, one card to a family). In addition to identifying the individual dependents, it also will indicate whether they are entitled to both civilian or military care or only to military care on a "space available" basis. These cards will have to be in use no later than July 1, 1957. Until the new system is in effect, the services may continue to use existing procedures for identifying dependents.

Note: Doctors and hospitals are expected to use "reasonable care and precaution" in identifying dependents. However, when care is furnished in good faith and subsequently it is determined that the dependent is not entitled to such at government expense, any action for recovery instituted by the government will be against the dependent or his sponsor, and not against the doctor or the hospital.

Charges Against Dependent for Medical Care

In military facilities, the charge against dependents will be \$1.75 per day for inpatient care, including cost of subsistence. As a restraint on excessive demands for outpatient care, the Secretary of Defense, on recommendation of the secretary of a service, may set uniform minimal charges for out-patient care.

In civilian facilities, the dependents will pay the first \$25 of expense incurred, or \$1.75 per day, whichever total is the larger, payment to be made to the hospital. If the physician decides a private room or private-duty nursing care is required, a portion of the cost will be assessed against the dependent. In the case of treatment outside a hospital for an injury, the patient is to pay the physician the first \$15 of costs, with the government paying the remainder as authorized by local fee schedules. J. E. B.

DEATHS

Dr. Otis A. Whitlow, 74, Savannah, died of a heart attack in Union City on November 18, 1956.

Dr. J. D. Laurance McPheeters, 69, Chattanooga, died on October 3, 1956.

Dr. William Oscar Baird, 73, Henderson, died November 19 at the General Hospital in Jackson. Dr. Baird was a former State Commissioner of Institutions. He was also a past-president of the Tennessee State Medical Association.

Dr. H. J. Lemmon, 67, Newport, died on December 4 in a local hospital.

Dr. Jewell M. Dorris, 55, Memphis, died December 3rd. He was a past-president of the Memphis Surgical Society.

Dr. Edward Harold Maurer, 58, Tullahoma, died October 15th in a Nashville hospital.

Dr. Forrest S. LeTellier, 63, Knoxville, died on October 15 at his home.

Dr. Thaddeus R. Montgomery, 77, Memphis, died on November 25 at the Baptist Hospital.

Dr. David H. Denney, 27, Milan, died December 4th at Milan hospital.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis-Shelby County Medical Society

The October meeting was held in the Institute of Pathology. The scientific program was as follows: (1) "Precipitation of Duodenal Ulcer Hemorrhage During the Administration of Reserpine," by Dr. A. J. Cummins, discussed by Dr. Robert McBurney; (2) "Management of Massive Scalp Lesions," Dr. J. D. Piggott, discussed by Drs. Robert Raskind and Harwell Wilson; (3) "The Use of Nitrofurazone in the Treatment of Pulmonary Metastasis from Testicular Malignancy," Dr. H. K. Turley; and (4) "Unexplained Severe Hypoproteinemia of Pregnancy," Dr. G. K. Rogers, discussed by Dr. Jack Eubanks.

Hamblen County Medical Society

The November meeting was conducted at the Public Health Department. The society voted that further investigation would be necessary before sponsoring a movie about atomic and hydrogen weapons. The scientific program consisted of an interesting case history, illustrated by color slides, of a case of extreme maxillo-mandibular defect, by Dr. Joe Gibson, Dentist of Morristown.

Nashville Academy of Medicine and Davidson County Medical Society

The November meeting was held in the Baptist Hospital Cafeteria. The announcement of Academy officers elected for the

coming year was made. The scientific program consisted of a paper by Dr. Carl McMurray, entitled, "Cancer of the Breast—Report on Present Status of Treatment." It was discussed by Dr. Chas. C. Trabue, IV., Dr. Louis Rosenfeld and Dr. H. S. Shoulders.

Chattanooga-Hamilton County Medical Society

The November 1st meeting was held in the Interstate Building. The scientific program consisted of a paper by Dr. Edward G. Johnson on "Ulcerative Colitis," and one by Dr. Jack Adams on "Tumors of the Thyroid Gland." It was announced that the Medico-Legal Clinic in cooperation with the Chattanooga Bar Association would not be held in 1956.

Roane County Medical Society

The November meeting was held at the Oak Ridge Hospital. The program consisted of a paper entitled "Cardiac Resuscitation—Panic or Purpose" by Dr. Harvey C. Slocum, Colonel and Chief, Anesthesia and Operative Service, Walter Reed Army Hospital, Washington, D. C.

Bradley County Medical Society

The December meeting was held at the Cherokee Hotel in Cleveland. Jack Ballentine, Executive Secretary was guest of the Society. The movie produced by the Tennessee State Medical Association entitled "Battle Against Death" was shown and discussed. Following the showing of the movie, Mr. Ballentine briefly discussed the highlights of the Dependents Medical Care Plan which went into effect on December 7. Questions and answers followed. The Society elected officers for 1957 which are as follows: Dr. Carl T. Speck, Cleveland, President; Dr. William I. Proffitt, Vice-President and Dr. Gilbert A. Varnell re-elected Secretary-Treasurer. Dr. William A. Garrott was named delegate to the Tennessee State Medical Association's House of Delegates and Dr. S. J. Sullivan, Alternate Delegate.

Sullivan-Johnson County Medical Society

The following officers have been elected for the year 1957: Dr. Charles J. Harkrader, Bristol, President; Dr. William A. Wiley, Kingsport, Vice-President; and Dr. I. E. Phillips, Bristol, Secretary-Treasurer.

Consolidated Medical Assembly

The Society met at the New Southern Hotel on December 4th where Dr. George Dodson gave a paper entitled "Appendicitis." The discussion was led by Dr. John Riddler.

Election of officers was held and Dr. Robert Morris of Medina was named President; Dr. C. N. Hickman of Bells, first vice-president; Dr. Montie Earl Smith, Jr., of Selmer, second vice-president; Dr. L. E. Trevathan of Bruceton, third vice-president and Dr. Stanford M. Herron of Jackson was re-elected secretary-treasurer.

Monroe County Medical Society

Dr. R. C. Kimbrough entertained the Society with a dinner at his home on November 20th. The guest speaker was Dr. Williamson of Knoxville. Eleven members were present.

Knoxville Academy of Medicine

The Society met in the Knoxville Academy of Medicine Building on December 18. The program consisted of an interesting case report by Dr. D. H. Waterman. Reports were heard from all committees and officers for 1957 were installed. Dr. J. Gilbert Eblen took office as president; Dr. Oliver W. Hill is president-elect; Dr. Alvin Webber is vice-president; and Dr. Ralph Monger was re-elected as secretary-treasurer. The President gave his annual address.

Robertson County Medical Society

The Society conducted its December meeting at the Jesse Jones Hospital on December 17. Officers for 1957 were elected. They were: Dr. John S. Hawkins, president; Dr. A. R. Kempf, vice-president; and Dr. John S. Freeman was re-elected secretary-treasurer. The scientific program was presented by Dr. Robert M. Roy of Nashville.

But fees charged by physicians in the three-month period ending in September increased only 0.8%. The over-all cost of living increased 0.7%. Medical care costs, when drug costs were excluded, increased 0.9%. Other changes in the cost of living index included: general practitioner's fees up 0.8%; obstetrical care up 1.7%; prescriptions and drugs up 0.7%; and dentists' fees up 0.16%. Important factors in the rise of medical care costs were a 3.2% increase in hospital rates and a 3.9% rise in Blue Cross fees.

The Month in Washington

A new venture in federal medical care,—the armed forces dependents medical care program,—was launched on schedule December 7, and 2 million dependents of servicemen became eligible for hospitalization and extensive medical care.

The "Medicare" program, because it is a pioneer effort, will be watched closely by members of Congress, the armed services and the medical profession. Congress will be interested in keeping track of the cost of the program as well as the availability of care. The Defense Department has earmarked \$41 million for the program through next July 1. Thereafter it is estimated the cost will run between \$60 million and \$70 million a year. When the program is operating at its peak, as many as 800,000 dependents not now getting care at government expense are expected to be participating.

In all but a few states, provision of medical care outside military facilities, is being made under agreements signed between the state medical societies' contracting agent (generally Blue Shield) and the Army, which is the executive agent for Defense. The contracts run for seven months, and all states are expected to renegotiate contracts prior to their expiration next July 1. New contracts naturally would reflect the experience gained since December 7.

As the vast new project went into force, the newly created Office of Dependents Medical Care (ODMC) stressed that the law intended that civilian medical care under the program should be comparable to that provided in armed services facilities. Participating physicians receive payment in full from the government under a published schedule of allowances. ODMC said this means that the doctor will receive payment for his usual charge or the amount set in the schedule whichever is less. ODMC made these additional points.

1. In the instances in which the physician believes that an allowance greater than that prescribed in the local schedule is justified, he should look to the government rather than the patient for payment. Provisions have been made for him to submit a special report to his state medical society and, the society, in turn, to the government.

2. Military dependents may submit as identification their post exchange card, the combined post exchange-commissary-military medical care card,

NATIONAL NEWS

Medical Costs Up During Third Quarter of Year

Over-all medical care costs for U. S. families rose 1.5% during the third quarter of 1956, according to U. S. Bureau of Labor Statistics study.

or the standard military dependent identification card. A special Medicare card is being prepared, and after next July 1 will be the only identification allowed for this purpose.

3. There are no plans in Defense for authorizing payments for drugs, medicinals or other medical supplies, except those furnished while hospitalized or those administered directly by a physician.

4. The claim form to be used by physicians in the Medicare program is called "*Statement of Services Provided by Civilian Medical Sources.*" ODMC said sufficient supplies have been furnished by all state agents.

5. The law and implementing regulations do not permit payment for any medical care, services or hospitalization prior to December 7; this includes prenatal care.

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The broad outline of legislative proposals to come from the administration in newly convened 85th Congress was first sketched by HEW Secretary Folsom in several appearances before newsmen in December. Among them are: (1) federal grants to medical schools for teaching facilities, (2) authorization for smaller insurance companies to pool resources without violating the anti-trust laws in effort to encourage expansion of voluntary health insurance, (3) increased attention to problems of older persons, particularly in health and adult education, (4) continued expansion and improvement in vocational rehabilitation, and (5) expansion of staff and facilities of the Food and Drug Administration.

MEDICAL NEWS IN TENNESSEE

Optometric Legislation

A recent bulletin from the American Optometric Association's Legal Counsel indicates that group plans to renew its efforts to restrict ophthalmology or widen the field of optometry, through legislation in many states beginning early in 1957. In view of the AOA's highly critical attitude toward the medical profession, any legislation supported by optometric groups during the next Tennessee Legislature should be scrutinized thoroughly by all physicians.

Pediatric Seminar

More than 100 physicians from seven states attended the fifth annual pediatric seminar on October 24th and 25th in Memphis at the Le Bonheur Children's Hospital. One of the featured speakers was Dr. A. E. Hansen, Chairman of the Department of

Pediatrics, University of Texas Medical School, and Director of the University's child health program. Other speakers were Dr. Weston M. Kelsey, director of the Bowman-Gray School of Medicine, Wake Forest College; and Dr. Tague C. Chisholm of Minneapolis, clinical assistant professor of surgery at the University of Minnesota; Dr. Earle L. Wrenn, Jr., Memphis; Dr. William J. Von Lackum, Memphis, and Dr. Francis Murphy, Memphis.

Cardiac Survey

A team of 18 Chattanooga doctors recently conducted a cardiac pilot survey among some 375 pupils at a Chattanooga school, sponsored by the Chattanooga-Hamilton County Medical Society and the Chattanooga Area Heart Association. Participating in the survey were: Drs. George L. Sivils, Harry S. Anderson, John P. Carter, Shelton F. Fowler, E. Wayne Gilley, C. A. Hartung, H. B. Henning, Philip H. Livingston, David P. McCallie, George R. McElroy, William B. MacGuire, Merrill Nelson, E. White Patton, Maurice Rawlings, Wesley H. Stoneburner, J. E. Strickland, Jr., A. Steven Ulin and Homer D. Venters.

John Sevier Chapter of AAGP

Dr. Holt H. Bradshaw, of the surgical staff of the Bowman-Gray School of Medicine, recently addressed the John Sevier Chapter of the American Academy of General Practice in Kingsport. The local chapter is comprised of physicians from Washington, Carter, Unicoi, Greene and Sullivan counties.

University of Tennessee College of Medicine

The University of Tennessee School of Nursing, in co-operation with the Campbell Clinic, recently sponsored a conference on orthopedic nursing to provide for a better understanding of the basic nursing needs of such patients and of their care in the hospital and home. Speakers included Drs. J. S. Speed, R. A. Knight, A. H. Crenshaw, P. Thurman Crawford, R. A. Calandruccio, Marcus Stewart and Harold B. Boyd.

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Eight Memphis physicians have been appointed to the staff and twelve have been promoted.

Dr. Noble W. Guthrie has been appointed instructor in the Division of Preventive Medicine and Dr. Norman Shapiro has been appointed an assistant in the Department of Anesthesiology. The following have been appointed assistants in the Department of Surgery: Drs. Claude McClure, James T. Duncan, Anthony P. Jerome, Earle L. Wrenn, Jr., Fenwick W. Chappell and John R. Hall. Drs. Jean M. Hawkes and John P. Conway have been promoted from instructor to assistant professor in the Department of Medicine. Drs. Bland W. Cannon and A. R. Tyrer, Jr., have been promoted from assistant to instructor in the Department of Surgery. The following have been promoted from assistant to instructor in the Department of Medicine: Drs. Sam C. Carter, Arthur L. Bellot, Phil Orpet, Henry Rudner, Jr., Thomas N. Stern, Cleo Stevenson, Marvin Wolff and Richard L. Wooten.

American College of Physicians Regional Meeting

A joint meeting of the Kentucky and Tennessee members was held in Nashville on December 8. The program was provided by members of the College of these two states. Dr. Sam Overstreet, Governor for the College for Kentucky, presided at the luncheon meeting. Dr. Hugh Morgan, Nashville, past-President of the College, introduced Dr. Walter Palmer, President of the College, who gave the after-dinner address. The meeting was attended by 50 members from Tennessee and 28 members from Kentucky, among whom was Dr. Murray Kinsman, Regent of the College, and Dean of the University of Louisville, College of Medicine.

PERSONAL NEWS

Dr. John B. Youmans, Nashville, Dean of Vanderbilt University School of Medicine, was installed as President of the Association of American Medical Colleges at its annual meeting in Colorado Springs, in November.

Dr. C. Barton Etter, Memphis, has been re-elected Chief of Staff at Le Bonheur Hospital. Other Memphis physicians elected at Le Bonheur were **Dr. M. Blake Arnoult**, Vice-President; **Dr. William P. Stepp**, Secretary; **Dr. James N. Ettel-**

dorf, Chief of Medicine and **Dr. S. Gwinn Robbins**, Chief of Surgery.

Dr. George K. Henshall, Chattanooga, discussed "X-Ray Therapy" on a telecast recently in Chattanooga.

Dr. Duane M. Carr, Memphis, has been elected President of the Southern Thoracic Surgical Association.

Six Cleveland physicians discussed polio recently at Lee College. **Dr. William A. Garrett** served as moderator with **Drs. Marvin Batchelor**, **Wesley A. Barton**, **W. C. Stanberry**, **J. C. Lowe** and **Jack Free**, as panelists.

Dr. William T. Howard, Memphis, has been elected President of the St. Joseph Hospital medical staff. Others elected were **Dr. Harold Feinstein**, Vice-President and **Dr. James H. Collins**, Secretary.

Dr. Samuel L. Raines, Memphis, represented the American Urological Association at the Congress in Mar Del Plata, Argentina.

Dr. J. Kelley has been elected President of the Medical Staff at Obion County General Hospital at Union City. Other officers named were **Dr. Richard H. Samuels**, Vice-President and **Dr. Malcolm H. Tipton**, Secretary.

Dr. G. Thomas Proctor, Maryville, has joined **Dr. J. H. Bowen** as radiologist at Blount Memorial Hospital.

Dr. Phineas J. Sparer, Memphis, has joined the University of Tennessee College of Medicine as full-time professor of psychiatry and preventive medicine.

Dr. William P. Maury, Jr., Memphis, has been named the Chief of Staff at Baptist Hospital. Other officers elected were **Dr. J. D. Evans**, President; **Dr. C. E. Gillespie**, President-Elect; **Dr. J. C. Turley**, Vice-President and **Dr. Russell Patterson**, Secretary.

Dr. Rufus S. Morgan, Pikeville, has been elected Mayor of that City.

The new officers for the Memphis Thoracic Society for 1957 are: **Dr. Franklin H. Alley**, President; **Dr. Edward F. Skinner**, Vice-President; and **Dr. Michael M. Marolla**, Secretary-Treasurer. All physicians are from Memphis.

Dr. James P. Wallace, formerly of Chattanooga, has entered the practice of medicine and surgery at Sherwood.

Dr. Robert C. Webster, formerly of Gallatin, has begun the practice of medicine at Cross Plains.

Dr. Oliver W. Hill, Knoxville, has been elected Chief of Staff of the Children's Hospital. Other staff officers chosen were **Dr. Sanford Carlson**, Vice Chief of staff; **Dr. Walter H. Benedict**, Secretary; and **Dr. George Mahon**, Chief of Laboratory.

Dr. Kenneth Twilla will begin the practice of medicine at the Medical Clinic in Woodbury.

Dr. W. Harold Andrews, Sparta, has been elected President of the Middle Tennessee Medical Association, and was installed at the meeting in November in Columbia.

Dr. Robert E. Merrill, Tullahoma, has been

elected a Fellow in the American Academy of Pediatrics.

Dr. William F. Encke is now associated with the Walter Pyle Clinic and Hospital in Franklin.

Dr. Lamar Knight, Knoxville, recently lectured to the Knoxville Chapter of National Registry of Medical Secretaries.

Dr. David V. Bradley, Nashville, was recently made a Fellow of the International College of Surgeons and a Fellow of the American College of Surgeons.

Dr. Robert Newman, Knoxville, recently addressed the Oak Ridge Kiwanis Club and his subject was "Cure and Treatment of Tuberculosis."

Dr. R. Gene Cravens is now associated with **Dr. H. F. Lawson** in general practice and surgery at Crossville.

Dr. Amos Christie, Nashville, was one of the speakers during the University of Mississippi School of Medicine academic dedication.

Dr. J. Thomas Bryan, Nashville, attended the annual seminar of the American Rhinologic Society in Chicago.

Dr. Walton W. Harrison, Jackson, has been elected a Fellow of the American Academy of Pediatrics.

Four Memphis physicians recently attended the American Society of Plastic and Reconstructive Surgery in Miami Beach. They were **Dr. W. Milton Adams**, **Dr. Lorenzo H. Adams**, **Dr. Anthony Jerome** and **Capt. Otto W. Wickstrom** of the Naval Hospital at Millington.

The following physicians have been advanced from Associateship to Fellowship in the American College of Physicians: **Dr. J. Warren Kyle**, Memphis; **Dr. Aubrey B. Harwell**, **Dr. J. Vernon Knight** and **Dr. J. Lanier Wyatt**, Nashville. Elected to Associateship were: **Doctors Thomas W. Green**, Bristol; **Bernard Tepper**, Chattanooga; **Phil Elvin Orpet, Jr.**, **Thomas N. Stern**, **Marvin Lee Wolff**, **Richard L. Wooten**, of Memphis; and **Robert C. Hartmann**, Nashville.

Dr. James R. Hamilton, Nashville, has joined **Doctors King**, **Hamilton** and **Buchanan** in the practice of Dermatology.

Dr. Sam N. Doane, Jr., Clarksville, has moved his office to 320 South Third Street.

tool of the chemist and as a clinical technique for the physician, geneticist, and clinical pathologist. This small volume contains several formal papers presented during the symposium as well as the informal discussions held following the presentations. For those engaged in the study of organic chemistry, as well as for those physicians with a particular interest in proteins, especially abnormal hemoglobin, this volume would be invaluable.

CHARLES THOME, M.D.

Internal Secretions of the Pancreas, Volume 9 of Ciba Foundation Colloquia on Endocrinology. Edited by G. E. W. Wolstenholme and Cecilia M. O'Connor. 287 pages. Boston, Little Brown and Company, 1956. Price \$7.00.

This symposium on problems under current investigation in the area of carbohydrate metabolism will be welcomed by physiologists, biochemists, and inquisitive clinicians. There are 17 original contributions by outstanding workers from many countries. Topics discussed include those of the mechanisms of action of insulin and glucagon as well as the interrelated roles of the liver, pituitary, and pancreas in regulating carbohydrate metabolism.

Grant W. Liddle, M.D.

ANNOUNCEMENTS

Meeting of American College of Surgeons in New Orleans, February 4-7

A four-day Sectional meeting of the American College of Surgeons will be held in New Orleans, February 4-7. The program includes panel discussions, symposia, scientific papers, cine clinic films in general surgery, and separate programs in the specialties of urology, ophthalmology, obstetrics-gynecology, otolaryngology, thoracic surgery, and orthopedic surgery. Clinics will be held at Charity Hospital of Louisiana, Eye, Ear, Nose and Throat Hospital, Hotel Dieu, Mercy Hospital—Soniat Memorial, Ochsner Foundation Hospital, Southern Baptist Hospital, Touro Infirmary, and V. A. Hospital.

"Medicine and the Law" New Motion Picture Series

The first in a series of motion pictures on "Medicine and the Law" had its premier at the Clinical Session of the A.M.A. Titled "Doctor, Take the Stand," the 30 minute film discusses the role of the medical expert witness, showing what doctors should do and what they should not do when they testify in court. Since between 60 and 85 per cent of all court cases involve medical testimony and require physicians as witnesses, the need for educating doctors in courtroom technic is apparent. The "Medicine and the Law" series is being supervised by Joseph Stetler, director of the

BOOK REVIEW

Paper Electrophoresis. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, and Elaine C. P. Millar. 220 pages, 74 illustrations. Boston: Little, Brown and Co., 1956. Price \$6.75.

In their usual thorough fashion, the editors of the Ciba Foundation have published the results of a seminar held last July on the subject of paper electrophoresis. Among the many new techniques currently being applied to the study of protein, lipid, and carbohydrate chemistry, paper electrophoresis holds great promise both as a research

Law Department of the A.M.A. "We hope," said Mr. Stetler, "to teach doctors and lawyers how to present cases requiring expert medical testimony thoroughly and accurately so that a just decision can be made." The American Bar Association is cooperating in this law film project.

Produced for the A.M.A. as a service to physicians by the Wm. S. Merrell Co., "Doctor, Take the Stand," will be available after December 15 through the A.M.A. Film Library for use by medical groups.

The New Orleans Graduate Medical Assembly

The twentieth annual meeting of the Assembly will be held March 11-14, 1957, at the Municipal

Auditorium. A postclinical tour to the Mediterranean and Europe has been arranged to follow the meeting.

Centennial Exposition and Health Show

The Academy of Medicine of Cincinnati (Hamilton County Medical Society) will celebrate its Centennial, February 27 through March 5, 1957. The occasion is to be highlighted by a Health Museum and Exposition at the Music Hall in order to interest the public in the fields of medicine, health, research and science. Prominent persons in organized medicine, government and in the field of medical science will take part in the program.

TENNESSEE STATE MEDICAL ASSOCIATION COMMITTEES, 1957

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Journal of the Tennessee State Medical Association

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Volume 50

FEBRUARY, 1957

Number 2

The giving of anesthesia used to be a relatively simple thing. Now the greater variety of agents and the increased number and scope of surgical procedures has made the giving of anesthesia an art and science unappreciated heretofore.

Symposium: Anesthesia and Anesthetic Agents

THE SELECTION OF ANESTHESIA FOR THE OPERATION*

FRANK S. BRANNEN, M.D., Chattanooga, Tenn.

This is a most difficult subject. There are so many variables involved that it is impossible to pick any one anesthetic agent and method which will suit everyone. Dr. Adriani states, "In general, five factors must be considered in selection of the anesthesia: (1) the nature of the operation; (2) the skill of the surgeon; (3) the skill of the anesthetist; (4) the status of the patient; and (5) the pharmacologic effect of the drugs used."

Since I cannot give here a simple formula for the choice of anesthesia for each surgical procedure, I feel it would be better to give you our reasoning in the selection of the anesthetic agent and methods to be used. To put it simply, we in anesthesiology feel that the correct anesthesia is the one which will upset the patient's physiologic state the least, will give the best conditions for the operating surgeon, and the one with which the anesthetist is fully familiar.

If the patient has a condition which gives practically no pathologic physiology as, for example, a simple inguinal hernia, then the surgeon's desires are met if possible. Some surgeons in our area practically demand a spinal type of anesthesia to give the utmost relaxation for a herniorrhaphy, while others insist upon a general anesthesia with only slight relaxation so that they may better do their work. Which is right? To us it is immaterial in the simple case. We merely try

to give the anesthetic desired by the particular surgeon who is to do the operation.

But let us suppose that this same patient has a strangulated hernia of several hours duration, that the bowel is gangrenous, that the electrolyte balance is disturbed, and that shock and catastrophe are impending. Then the question becomes somewhat more complicated. Since the operation must be done immediately, the agent and method will depend entirely upon what the patient can stand. It is now necessary for the surgeon and anesthetist to consult and agree upon a plan of anesthesia which will upset the patient's already altered physiologic state the least, and yet give as good operating conditions as possible. It is obvious that light anesthesia should be used with increased oxygen, and that the respiratory and cardiovascular systems must not be depressed. Electrolyte replacement, fluid and other treatment must be started immediately, if this has not already been done, and continued through the anesthetic period. Deep anesthesia with cardiovascular and respiratory depression in a case such as this can mean only a fatality.

There are certain patients who have an altered physiologic state not related to the surgical diagnosis, as for example, in asthma, diabetes mellitus and cardiac disease. These conditions require careful handling of the anesthesia, but the principle thought about each is the same. That is, use an anesthetic agent and method which will least upset the already altered physiologic state. In asthma one must avoid a

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parasympathetic drug, or else one may produce an acute asthmatic attack on the operating room table. Furthermore, one must be prepared to treat such a condition should it arise. Pentothal and cyclopropane are both likely to initiate such an attack. Ether, on the other hand, relaxes the bronchioles. In diabetes mellitus one should avoid ether if possible, because ether raises the blood sugar 300 to 400 per cent. And one must also be careful not to give intravenous fluids containing glucose unless these are properly covered by insulin. In the cardiac patient the blood pressure and oxygenation must be maintained for an "already tired horse cannot run a good race."

Endotracheal tubes should be used to insure a good airway whenever necessary. It is especially important for surgery of the head and neck and is an absolute must for thoracic surgery. An endotracheal tube correctly placed by a gentle method assures a good airway and almost absolute control of respiration. This gives a much quieter field for upper abdominal operation also. We have used them for the thin, emaciated, toothless face with Levine and oxygen tubes projecting from the nares.

Another condition which might jeopardize the entire personnel in the operating

room is the use of an explosive agent when the cautery or Vovie are to be used, or when other explosive hazards exist. Ether, cyclopropane ethylene and Vinethene and others, should be avoided under such circumstances. Nylon, silk, rayon and wool should not be permitted in the operating room since they may initiate a static spark which might blow up the whole room. Non-conductive shoes should be avoided for the same reason.

One could go on for hours considering only one operation and explaining the various agents and methods to suit the possible altered physiologic conditions, surgeons' desires, anesthetic capabilities and pharmacologic peculiarities. This is the reason we spend years learning all the possibilities and probabilities of anesthesia, and since research is ever progressive, it seems as though we can never catch up, much less explain it to you in ten minutes. If I could leave but one thought with you, it would be the following.

Have a competent anesthetist who will use the proper drugs and technics which will upset the patients physiologic state the least, and yet give good operating conditions for the surgeon.

THE USE OF MUSCLE RELAXANTS*

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The clinical use of muscle relaxants is based upon the ability of these drugs to relax skeletal muscle. The advantages of neuromuscular blockade as an adjunct to anesthesia, and in conditions involving spasticity and rigidity are now widely recognized.

The first of these drugs used was curare, the modern clinical use of which probably dates from 1932. Since that time a number of other drugs have undergone therapeutic trial. Those in common use at present include d-tubocurarine chloride, decamethonium bromide, and succinylcholine chloride.

The mode of action varies with the chemical nature of the drug. Investigators now agree that interference at the neuromuscular junction to the extent that muscular relaxation is produced can be of two diametrically opposed actions. These basic differences in mechanism invariably present many differences in behavior and delicate problems in administration. A thorough knowledge of the specific drug and the details of its effects are necessary to the one who gives them.

This discussion will be confined to the basic principle of neuromuscular block, in whatever manner produced, and unless specifically indicated will apply to the muscle relaxants as a group.

Clinical Uses

I. *Adjunct to Anesthesia.*

Anesthesiologists use muscle relaxants in

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many ways, most commonly in complementing general anesthesia.

- A. Manipulations within the abdomen are facilitated by a state of complete muscle relaxation, associated with quiet respiration and contraction of the intestines. Muscle relaxing drugs secure these conditions in cases in which this would be difficult or hazardous by means of anesthetic agents alone. Adequate relaxation can be provided by these drugs in relatively light planes of anesthesia, thereby avoiding the deleterious effects of prolonged deep anesthesia with potent agents.
- B. The field of applicability of relatively impotent anesthetic agents, such as ethylene and nitrous oxide, has been widened by muscle relaxants, and has made possible the production of relaxation with non-inflammable agents or combinations of agents. Baird publicized the use of a pentothal-curare solution in combination with nitrous oxide-oxygen. This method is useful in the presence of explosion hazards.
- C. The use of muscle relaxants facilitates controlled respiration, a technic which is useful in situations in which the pleural space is open, partial or complete respiratory paralysis is present, and a quiet completely relaxed abdomen is needed.
- D. Endoscopic procedures often may be facilitated by the use of muscle relaxants. The profound muscle relaxation of limited duration required for the performance of direct laryngoscopy and endotracheal intubation may be secured by use of relaxants, usually one of the rapidly acting drugs. Diagnostic endoscopy with topical analgesia, with or without general narcosis, is aided by the use of muscle relaxants.
- E. Relaxation of the perineal muscles during the second stage of labor may be produced by relaxant drugs. With resistance to passage of the child thus reduced, the possibility of consequent injury to it is likewise diminished.

II. Nonanesthetic Uses.

The ability of these agents to produce re-

laxation of skeletal muscles offers the clinician several nonanesthetic possibilities.

- A. The ability of small doses of curare to relax the "squeezing muscles" and to bring the eyes to rest in the primary position has won the drug a place in ophthalmology, particularly for cataract operations usually under local anesthesia.
- B. By softening the peripheral effect of electro' or metrazol shock without diminishing the psychic effects, muscle relaxants have proved to be a valuable adjunct to convulsive shock therapy.
- C. Muscle spasm of poliomyelitis and tetanus is alleviated under certain circumstances by the use of muscle relaxants. Muscle spasm of acute low back pain and similar syndromes also has been relieved by depot curare. By this means one may differentiate between simple muscle spasm and the limitation in motion of joints from organic changes. One to two cc. of a 3 per cent suspension in oil is given intramuscularly every 2 to 3 days.

Precautions

The muscle relaxants should not and cannot be a substitute for poorly conducted anesthesia. A satisfactory anesthetic state must be achieved before attempting to augment relaxation by relaxant drugs. Many of the difficulties encountered with these drugs are associated with insufficient anesthesia.

The anesthetic procedure during which muscle relaxants are to be employed is not altered in any significant particular. Pre-medication is of the same nature and dosage as ordinarily used. Induction and establishment of anesthesia are performed as usual and anesthesia is leveled off in the second plane of the third stage. The inhalation agent most frequently used is cyclopropane. With less potent agents larger doses of relaxants are required and respiratory depression is more frequent, more marked and more prolonged as a result. Ether has a curariform action and smaller doses must be used when this anesthetic agent is used.

The relaxant is given intravenously because of more positive action, more rapid

onset of action and more precise calculation of dose-effect relationship. The dose required will vary with the extent of relaxation needed, the type of relaxant used and the anesthetic agent being employed. With second plane cyclopropane anesthesia, the following may be expected to produce neuromuscular block: d-tubocurarine chloride 9 mg., succinylcholine 10 to 20 mg., decamethonium bromide 3 mg.

Because all the usual signs of anesthesia are dependent upon the activity of the striated muscles, and because these are so completely altered by these drugs, the plane of anesthesia of the patient under the influence of relaxants cannot be judged with accuracy.

The valuable muscular relaxant power of these drugs is also one of the greatest dangers. The advantages of relaxants are secured at the expense of adequate ventilation. When neuromuscular blockade is produced, it affects all striated muscles of the body, including the muscles of respiration. The danger of severe respiratory depression or arrest is always present and it is imperative that assistance to ventilation be provided. Artificial respiration must be supplied until spontaneous respiration is resumed. The inability of the administrator to perform artificial ventilation adequately and thus successfully combat the respiratory paralysis is the one frank contraindication.

Postoperative pulmonary complications are markedly increased unless special precautions are taken to maintain adequate gas exchange until the effects of the relaxant have subsided. It should not be forgotten that the longer acting relaxants may have clinically nondetectable but nevertheless significant postanesthetic effects. A serious evaluation of the patient's ability to maintain ventilation, cough and other muscular effort in the postanesthetic period should be made.

Always possible during profound relaxation, however produced, is passive regurgi-

tation and aspiration of gastric contents. This is probably due, in part at least, to relaxation of the cardia and esophagus.

Contraindications

Contraindications to the use of muscle relaxants are myasthenia gravis and respiratory obstruction which is not amenable to immediate correction. Patients with myasthenia gravis are extremely sensitive to curare. This fact has stimulated the use of the substance as a diagnostic test. It also constitutes a contraindication to the use of curare as an adjunct to anesthesia.

Muscle relaxants should not be used in any condition which prevents opening the mouth; as in peritonsillar abscess or in extensive damage or inflammation of the floor of the mouth. For technical reasons these drugs are usually avoided when blind nasotracheal intubation is to be done.

Although the fate in the body is not fully known, these drugs are thought to be excreted by the kidney. Impaired renal function is considered to be a relative contraindication to the use of muscle relaxants.

Conclusion

The muscle relaxants are not anesthetic agents and they are useful only by reason of their ability to produce muscular relaxation. This relaxant power is also one of the greatest dangers. These drugs will continue to enjoy a reputation as safe and useful adjuncts only if intelligently applied by those who are alert to the early signs of the deleterious effects associated with profound and protracted relaxation of the skeletal muscles.

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DANGERS OF HYPOXIA AND HYPERCARBIA*

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During the past 20 years many new techniques and drugs have been introduced into clinical anesthesia. These have been concomitant with more extensive types of surgery, and operations for diseases and conditions once thought not to be amenable to surgery. However, with this increase in types of anesthesia and types of surgery, there has been an increased incidence of cardiac arrest.

The drugs which have been introduced have one common denominator. They all cause depression of respiratory exchange. Some, such as the barbiturates and cyclopropane do this by depression of the respiratory center, by elevation of the threshold of the center to carbon dioxide. Others, such as the muscle relaxants and spinal anesthesia, depress the muscles of respiration indirectly. These actions may lead to both hypoxia and hypercarbia in the anesthetized patient who cannot respond normally to either condition.¹

When the closed system of anesthesia was developed, permitting the use of oxygen with the anesthetic agent, one of the dangers, hypoxia, was diminished. However, it is a frequent occurrence for extreme hypercarbia to be present with more than adequate oxygenation with a closed system.²

Effects of Hypoxia and Hypercarbia on the Body

Hypoxia causes the following reactions:³ (1) there is an increased respiratory rate, mediated by way of the chemoreceptors in the carotid body; (2) there is dilatation of the coronaries with increased cardiac output, and an increase in blood pressure and pulse rate; (3) there is dilatation of the cerebral blood vessels. These reactions are compensatory mechanisms brought into play by the body to deliver more oxygen to the vital tissues of the body,—the myocardium and the brain.

On the other hand there are certain results of hypoxia which lead to a vicious

cycle with an increase in the hypoxia. (1) With associated hyperventilation there develops hypocarbia, causing depression of respiration. (2) There is also increased capillary permeability leading to more tissue hypoxia, and particularly more aveolar hypoxia. (3) There is a depression of renal and liver functions, leading to depressed vasomotor responses. (4) There is also depression of the brain and the respiratory center by the direct effect of oxygen lack. The cerebrum cannot do without oxygen for more than 8 minutes, the cerebellum 18 minutes, the medulla 20 to 30 minutes and the spinal cord 45 to 60 minutes.

The effect of an excess of carbon dioxide on the body system is varied.⁴ Of course there is an attempt to adjust and to compensate for this accumulation of carbon dioxide by the buffer and excretory systems, but they cannot compensate rapidly enough for this acute condition. There is an increase in the rate and depth of respiration by an effect upon the respiratory center. However, the depression of the respiratory center by all anesthetic agents precludes this reaction under anesthesia. There is an increase in blood pressure due to the central effect on the vasomotor center. There is also peripheral vasodilatation, flushing of the skin, dilatation of the pupils. There is broadening of the QRS complex, and the production of ventricular tachycardia and perhaps ventricular fibrillation.

Much work is currently being done on the effect of hypercarbia and hypoxia on cardiac arrest. Sloan⁵ and Seely, Young and Hams^{6, 7} have shown in their work that with hypercarbia the effect of vagal stimulation, producing asystole, is greatly enhanced. It has been thought that hypoxia also causes the same phenomenon. However, experimentally, unless the hypoxia is extremely severe,—that is, occurring with marked respiratory obstruction, or marked decrease in circulation,—there is a decrease in the asystole with vagal stimulation. Miller and associates,⁸ Seely and collaborators,⁷ and also Maeir and Rich,⁹ found that the body tolerates high carbon dioxide levels unless

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there is vagal stimulation or until there is a rapid return to atmospheric conditions. When this occurs ventricular fibrillation occurs in experimental animals. This is preceded by electrocardiographic changes and an increase in the potassium ion which rapidly increases after the return to atmospheric conditions. The tendency for this to occur is greater in those animals which are subject to surgical trauma and to blood loss. Dripps,¹⁰ in 1947, found the so-called cyclopropane shock was due to a return to atmospheric conditions from a condition of respiratory acidosis. This condition resulted from the respiratory depression with cyclopropane. The same was true when Pentothal and a muscle relaxant was used.

The presence of respiratory acidosis in experimental animals can certainly cause, or predispose to the occurrence of cardiac arrest.

Conditions which lead to Hypoxia and Hypercarbia

The following is a classification of the types of hypoxia by Saklad:³ (1) atmospheric, or insufficient oxygen in the inhaled atmosphere; (2) tidal; (3) aveolar; (4) hemoglobic; (5) stagnant; (6) histotoxic; and (7) demand. It is possible for any one or combination of these to occur during anesthesia or the operation.

It would be well to point out that the dependence on cyanosis as a criterion for the degree of arterial oxygenation is a valueless sign. Comroe and Fellow¹¹ have shown that marked hypoxia may be present before cyanosis develops. Any person who has been observing a patient is less likely to notice cyanosis than a more casual observer. Oxygenation is usually adequate when ether or cyclopropane are given with a closed system.

When a semiclosed method of anesthesia is used, that is oxygen with nitrous oxide or ethylene, there may be present hypoxia if it is not given properly. Fortunately, I believe there are only a few people who blindly go on giving a 90-10 mixture of nitrous oxide and oxygen. Schwartz, Adriani, and Mih¹² have shown that even with an 80-20 mixture, after a period of 7 minutes, oxygen desaturation may occur

and carbon dioxide retention occurs. This is true unless adequate flows of gases are given, equalling the patient's minute respiratory volume. Also, when Pentothal is given there is decreased oxygenation unless oxygen is given with it.

The occurrence of hypercarbia is due to an inadequate respiratory exchange, even the patient will oxygenate himself adequately under the same conditions. If there is depression of respiration from the anesthetic agent, an inadequate exchange from any cause, there is always the possibility of the development of hypercarbia.

Beecher¹³ and his group found that in the lateral position there is a marked tendency toward the development of respiratory acidosis. This is even more likely to happen if the chest is open. There is also a decrease in ventilation in the extreme Trendelenburg position, the dorsal lithotomy position, the position for nephrectomy, or any condition in which there is interference with the movement of the intercostal muscles or the diaphragm.

Prevention of These Conditions

The best method of preventing the occurrence of hypercarbia is to adequately and actively assist the patients' respiration. This results in emptying of the aveoli of carbon dioxide. This can be accomplished very easily manually. Those patients who are emphysematous should be particularly well ventilated, and in some cases it may be necessary to use a mechanical ventilator giving both positive and negative phases to respiration in this type of patient.²

When any anesthetic is given, such as Pentathol and nitrous oxide, oxygen should be given with it to provide adequate oxygenation and to decrease markedly the amount of Pentothal that is necessary. When the muscle relaxants are used, one should be particularly active in assisting the patient's respiration. When patients have increased demand for oxygen because of fever or hyperthyroidism, one should be sure that there is adequate oxygen flows to meet this increased demand. In some patients, those who are cyanotic or severely hyperpyretic, the use of hypothermia to decrease the oxygen requirement is of great value. One should not use inhalations of

carbon dioxide for stimulating a patient's respiration. This is true during anesthesia and for newborns. In these patients, the respiratory center is depressed and the administration of CO₂ may lead to the occurrence of CO₂ narcosis.

As one of the methods of maintaining a relatively normal physiologic condition during current anesthesia and surgery, one should be sure that at all times the respiratory exchange of the patient is adequate not only for oxygenation but for the elimination of carbon dioxide. If this is done, there is eliminated one very probable factor in the cause of cardiac arrest.

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Patent Ductus Arteriosus in Infancy. Banersfeld, S. R., Adkins, P. C., and Kent, E. M.: *J. Thor. Surg.* 33:123, 1957.

This report is concerned with the diagnosis of patent ductus arteriosus in infants who do not have the continuous murmur characteristic of this defect. The authors point out that at birth there is little difference in pressure between the systemic and pulmonary circulation with little flow from the aorta to the pulmonary artery. The murmur becomes continuous by the age of six months when a considerable pressure differential exists between the aorta and the pulmonary artery and blood flows from the aorta into the pulmonary artery both during systole and diastole.

The paper presents the authors' experience with 22 patients under the age of 2 years who were proved to have a patent ductus arteriosus. In 9 of these patients a continuous murmur was present together with other typical physical and roentgenographic findings so that the diagnosis of patent ductus arteriosus was made without difficulty. Of the remaining 13 infants, 12 had only a systolic murmur heard along the left sternal border. In one infant the murmur was systolic and diastolic but not continuous. In 3 infants

with proved patent ductus arteriosus the murmur was maximal along the lower left sternal border. In these 13 infants the absence of a continuous murmur made it impossible to differentiate this from other lesions causing a left-to-right shunt such as a high ventricular septal defect. In these patients additional studies were considered necessary to determine whether or not a patent ductus arteriosus was present. Retrograde aortography was carried out under general endotracheal anesthesia by inserting a small polyethylene catheter into the left common carotid artery under direct vision. After giving a small test dose to determine sensitivity, a rapid injection of 6 to 8 cc. of 35% Diodrast was made into the carotid artery and a single anteroposterior chest X-ray was taken at the exact moment of completion of the injection. Simultaneous demonstration of the dye in the aorta and pulmonary arteries by X-ray was considered diagnostic of an aorticopulmonary shunt. The authors considered this procedure to be the simplest method of establishing the presence or absence of a patent ductus arteriosus in small infants. (Abstracted for the Middle Tennessee Heart Association by Walter L. Diveley, M.D., Nashville.)

Oral antidiabetic drugs have been under study during the past several years. The author records his brief experience with Carbutamide.

TRIAL EXPERIENCES WITH THE ORAL ANTIDIABETIC AGENT BZ-55.

Its Use in 13 Diabetics Over a Six Months' Period

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The discovery of insulin by Banting and Best in 1921, was a milestone in the treatment of diabetes mellitus. However, the necessity for one or more daily injections has always marred the satisfaction of the patients with their treatment. Many substances have been tested for oral administration, but most have been discarded because of lack of effectiveness or because of toxicity. From 1942 to 1946 sulfonamide products capable of producing hypoglycemia were studied by Loubatieres and also by Jonbon. Further research followed, and BZ-55 (Carbutamide) was developed among other agents. In 1953, Dr. Fuchs, himself, took BZ-55 and showed its hypoglycemic effect. In 1954, Franket and Fuchs,¹¹ as well as other authors here and abroad, reported their successes with oral sulfonamides.

Pharmacology

BZ-55, otherwise known as Carbutamide, has a formula of N sulfonyl-N-n butylurea $\text{NH}_2-\text{C}(=\text{O})-\text{SO}_2-\text{NH}-\text{CO}-\text{NH}-\text{CH}_2-\text{CH}_2-\text{CH}_3$. When orally administered, BZ-55 has an action similar to insulin in its effect on the blood sugar. Larger doses produce a typical hypoglycemic picture. After the administration of a 2 Gm. dose, sulfonamide appears in the blood within one-half hour and within three hours a level of 7.5 mg. per 100 cc. is reached. After about seven hours from the time of administration, the level decreases until it finally disappears from the blood stream.

The recommended dosage of BZ-55 is an initial dose of 2 Gm. the first day, 1.5 Gm. on the second day, and 1 Gm. daily thereafter. Oral Carbutamide is not a complete substitute for insulin because it does not increase the utilization of glucose by the tissues and, furthermore, it has no activity when there is a total absence of insulin. Its action is thought to be achieved largely in the liver by the inhibition of glucose formation, but this is open to question.

Clinical Study

At this Veterans Facility there are approximately 50 members of Domiciliary who are known to have diabetes mellitus.

Upon admission to the Domiciliary all members are screened for diabetes. If the patient is diabetic the disease is regulated by admission first to the hospital, or by careful outpatient supervision. A special diabetic dining room is used, and regular follow-up examinations of blood and urine are done for sugar. The group is periodically observed for the possibility of complications. Since May, 1956, an attempt has been made to treat 13 of these diabetics with BZ-55. The results have been satisfactory in 10 patients. They were studied to observe the hypoglycemic action of the drug as well as to detect possible side effects or toxic reactions. It was found that the mild or moderate diabetic was a suitable candidate for trial management with the drug, but that the unstable or severe diabetic did poorly. The latter cases were soon removed from the series and were not included in the overall results.

Two patients developed serious side reactions.

The first patient was a 64 year old white man who had diabetes for 8 years and was treated by diet alone. He was placed on Carbutamide and did well for the first four weeks of therapy. He soon developed symptoms of coryza, cough and fever, for which he was hospitalized. The febrile state lasted six days with temperature readings of from 100 to 102° daily. The Carbutamide blood level was 8 mg. per 100 cc. His temperature dropped by lysis to normal when the blood Carbutamide level reached zero. No other pertinent physical findings were noted. He was again placed on Carbutamide and is doing well.

The second veteran was a white man, aged 67, who had diabetes of three years duration and was controlled with 25 units of long

acting insulin. He was placed on BZ-55 and did well for two weeks. Soon thereafter he developed a urinary tract infection. He was hospitalized and a blood N.P.N. was found to be 100 mg. per 100 cc.; there was a leukocytosis. The urine was positive for *E. coli*, albumin and innumerable white cells. He was treated for his urinary tract infection which responded favorably to antibiotics. The Carbutamide was also discontinued.

The average age of the patients corresponded closely to that of our population on the Station. They were World War I veterans in their late fifties or in their sixties. The onset of the diabetes occurred in their later years and was not necessarily of the unstable type. The length of history of known diabetes was from one month to fourteen years, but this was not a material factor in the control of these patients. Many of these patients have disabilities such as arteriosclerosis, heart disease, hypertension, kidney disease, joint deformities, amputations, polycythemia, senile emphysema, and defective vision. None have been in diabetic coma or severe hypoglycemic shock either during this study or prior to the study. The insulin requirements were from 10 to 40 units a day. The use of insulin in regulating these patients has been based on the finding of more than 20 Gm. of urine sugar in 24 hours, a blood sugar of more than 180 mg., or a tendency toward complications.

To begin the study, the patients were taken off insulin and the urine and blood

sugars were recorded; all developed an increase in the level of blood sugar. BZ-55 was begun, and in a short time all patients returned to a state of good control. Table 1 provides the information on the patients used in this series representing the 13 individuals which were initially selected. The table lists the fasting blood sugar prior to insulin therapy. The blood sugar levels prior to insulin therapy varied from 228 to 476 mg., and following insulin therapy from 168 to 130 mg. per 100 cc. The dose of insulin varied from 10 to 35 units of insulin.

The patients were placed on Carbutamide in May of 1956, with a daily dose of 1 Gm. The fasting blood sugars under BZ-55 therapy varied from 120 to 416 mg. per 100 cc. Those in whom a favorable blood sugar level could not be obtained were dropped from this program. In the column listing the complete blood count, the letter "N" indicates "normal," if the red cell and white cell counts were within a normal range, as well as normal hemoglobin values and packed cell volumes. None of our patients showed any blood dyscrasia in either the cellular forms nor in the hemoglobin level. The liver function profile tests used were the alkaline phosphatase, icterus index, prothrombin time, cephalin flocculation tests, nonprotein nitrogen, total proteins and albumin-globulin ratios. All in this series were normal. The blood sulfa level varied from 6.5 to 9 mg. per 100 cc. If the patient felt as well as usual with all these factors, his control was considered as fair to good.

Table 1.

Number	FBS Prior to Insulin	FBS After Insulin	Insulin Dosage	BZ-55 Dosage	FBS	CBC	Liver Profile	Carbutamide Level	Control
1.	330	160	20 U PZI	1 Gm.	155	N	N	6.5%	Fair
2.	228	135	10 U	1 Gm.	126	N	N	6.7%	Good
3.	360	164	30 U	1 Gm.	164	N	N	9.5%	Good
4.	400	168	30 U	1 Gm.	155	N	N	7%	Good
5.		145	35 U	1 Gm.	135	N	N	7.9%	Good
6.	446			1 Gm.	155	N	N	8%	Fair
7.	476	155	25 Lente	1 Gm.	416	Discontinued			
8.	320	143	15 U	1 Gm.	145	N	N	8.7%	Good
9.	260	130	15 U	1 Gm.	105	N	N	9%	Good
10.	273	143	25 U	1 Gm.	145	N	Discontinued	8%	
11.	360			1 Gm.	160	N		7%	Good
12.	285	130	25 U	1 Gm.	120	N	N	8%	Good
13.	380	130	30 U PZI	1 Gm.	270	N	N	Discontinued	

FBS=fasting blood sugar. CBC=complete blood count.

Summary

Thirteen patients were carefully studied over a six month period during which time it was considered necessary to stop the drug in three patients. It was felt that the mild diabetic responds well as insofar as his blood sugar is concerned. The further factor of over enthusiasm on the part of the patients comprises a hazard in the decision as to the use and continuation of this drug. This enthusiasm far outweighs any observable benefits.

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The author summarizes important aspects of the subject of sodium restriction, outlining the everyday pitfalls.

SODIUM RESTRICTION IN CONGESTIVE HEART FAILURE

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There has been considerable interest in the role of sodium and water metabolism in many diseases, and the practicing physician is confronted with many viewpoints. These range from those of the investigator, who may be remote from all but a limited phase of clinical medicine, to the medical service representative of a drug firm who tries to present a reasonable argument for the use of his product. The unwarranted influence of both of these extremes on the practicing physician should not be underestimated and I think the question of sodium restriction in patients with congestive heart failure is a case in point. This is brought about by the lack of critical evaluation of isolated case reports, by undue stress of the range of "normal" in laboratory findings, and the sometimes distorted information obtained as a result of intense competition in the pharmaceutical industry. The latter is due to the difficulty in presenting a "clinical" discussion of a subject, referring to papers of reputable investigators, and at the same time reconciling the use of a product known to be a factor in producing sodium depletion.

Despite the fact that any physician can prove to himself that with adequate sodium restriction and digitalis his patient with congestive heart failure will have less, or no need for any form of diuretic therapy, there is such confusion on the subject that many physicians are reluctant to stress rigid restriction. They will tell their patients to use a "little salt" or "go easy on salt." As a result, many patients are either remaining in some degree of congestive failure, receiving injections of a diuretic which could be avoided, or taking an oral diuretic which may or may not be adequate. Sections of the Report on Sodium-restricted Diets¹ presented considerable factual information. Of necessity such a report for completeness must mention and discuss the various aspects of any specific clinical entity, without deviating from its basic purpose. Burch² recently stated that rigid

sodium-restricted diets should be reserved for the severely ill patient. This is taken out of context and perhaps does not truly represent the author's thoughts on the subject. However, the average physician may likewise take a statement from a recognized authority out of context and stop using a valuable regimen.

Barger and associates³ review the evidence for the well accepted fact that with congestive heart failure there is sodium retention. They further postulate that "reductions in the maximum sodium excretion occur far earlier in the course of heart disease than formerly supposed, even at a time when resting cardiac output is in the normal range."

It would seem rational to treat a state of sodium (and water) retention, first physiologically, i.e., attempt to enforce the degree of sodium restriction necessary to maintain the patient's "dry weight." Then, if for one reason or another it cannot be done, resort to pharmacologic methods (diuretic therapy). Case reports of instances of the "low sodium syndrome" have been stressed to such a degree that many patients are allowed to gradually drown themselves because of fear of this relatively remote possibility. Thinking in terms of sodium restriction alone, significant sodium depletion does not occur in a patient with congestive failure unless there was prolonged excessive sweating, some abnormal loss of body fluids, or severe renal disease. With progressive failure and edema there may be need for diuretic therapy. Even then the ability of the patient with congestive heart failure to tolerate progressively lower and lower sodium levels seems remarkable in light of our accepted lower levels of normal for serum sodium, and the profound disturbances which are produced when an acute illness rapidly reduces the sodium to comparable levels in the otherwise normal individual, e.g. Patients who, after surgical operations, have inadequate replacement of sodium. Apparently the rapidity with

which sodium depletion occurs determines the clinical state at any given level of serum sodium. With attempts to produce diuresis in the patient edematous from congestive failure by giving hypertonic saline or other repair solutions, one may produce more edema rather than a diuresis long before a normal sodium level is reached. Progression of congestive failure inevitably leads to a state for which nothing "right" can be done. If restriction of sodium and diuretics are used sodium depletion occurs and edema may still persist; yet if sodium is given, edema may increase instead of the expected diuresis.⁴ However, the majority of patients under medical care are far from such a terminal phase and will respond nicely to conventional treatment.

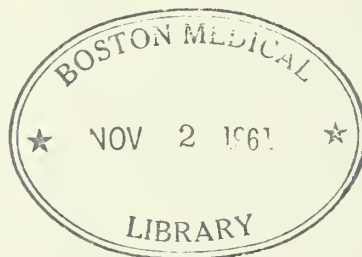
All patients with congestive failure may not need an extreme restriction of sodium, but they will not be harmed by the regimen. Even with the best efforts of the average patient at home, it is most unlikely that the sodium intake will be less than needed. It would seem well to have every patient who presents even minimal evidence of congestive heart failure on a "sodium-free" diet. Then if such a degree of restriction is found to be unnecessary, continue to enforce a rigid discipline in the preparation and selection of foods, but allow a weighed or measured portion of sodium chloride (e.g., $\frac{1}{4}$ teaspoonful) per 24 hour period, to be

added to foods which are to the individual most unpalatable without it. This will prevent ingestion of too much hidden sodium. Better control will be maintained than by simply telling the patient he can have a "little salt."

There are some arguments set forth that it is proper to let patients have "some salt" since we have good diuretics. This seems to be about as irrational as the argument for letting a patient with diabetes mellitus have an unrestricted diet since we have insulin. We do not hesitate to control many diabetic patients rigidly because of the dangers of severe insulin reactions in relatively few. Most patients would much prefer to restrict sodium than have to receive a diuretic regularly, if the problem were explained to them and they were assured of more comfort over a longer period of time by this measure.

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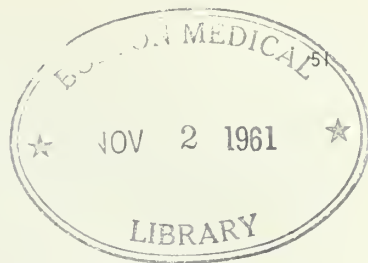
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The postoperative treatment of patients having strabismus is most important for the patient's comfort and for the full benefit of vision.

THE POSTOPERATIVE TREATMENT OF STRABISMUS*

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In the ideal case, when the patient reaches the postoperative period, three aims should have been accomplished: (1) equal vision in the two eyes; (2) normal retinal correspondence; and (3) parallel position of the eyes with normal ductions and versions. Even if one succeeds in these objectives, the patient must still be taught to use his eyes in comfortable binocular vision for both distance and near. Needless to say this ultimate result is not reached in every case.

The postoperative treatment varies with the immediate goal, whether one wishes to obtain a functional result or merely to improve the appearance of the eyes.

Cosmetic Goal

If a cosmetic goal is sought, the treatment consists only of relieving pain and keeping the eyes clean immediately following operation. If bleeding is minimal I do not use any dressings postoperatively, but only apply antibiotic ointment into the eyes. If a bilateral operation is done, I feel there is much less psychologic trauma to the patient, especially a child, by leaving the eyes open than by using a binocular bandage. The patient is allowed to get up the day following operation and to go home in one or two days depending on whether they live nearby. If there is much discharge following operation, the patient is sent home to use antibiotic drops or ointment. The patient is then seen once or twice in the office, and discharged after a week to return in six weeks.

If a gross undercorrection or overcorrection is apparent, the surgeon should be the first to express his dissatisfaction and to suggest that a second operation may be necessary. With this approach the patient or parent may become quite sympathetic or even suggest that the eyes look straight to them.¹ Preoperatively I tell the parent or patient before all operations for strabismus

that a second procedure may be necessary.

One cannot predict the final cosmetic result until the effect from the operation becomes stabilized. In general, a simple recession of one muscle has usually obtained the final effect in about two months; a recession-resection or bilateral recession in two-three months and from a resection alone in about six months.

Functional Results

We cannot achieve a functional result in every case, but certainly our successes will be more frequent than if we did not try at all. For treatment we can divide these postoperative cases into three categories, since the treatment varies in each.

I. No deviation to less than 10 diopters deviation with normal retinal correspondence.

II. No deviation to less than 10 diopters deviation with anomalous retinal correspondence.

III. More than 10 diopters deviation with either normal or abnormal retinal correspondence.

I. *No deviation to less than 10 diopters deviation with normal retinal correspondence.* If a patient with esotropia is overcorrected surgically, the deviation may be decreased by reducing the plus correction. This would stimulate accommodation and consequently increase convergence. With a residual esotropia one should give the maximum plus correction that can be tolerated. Frequently even an additional plus 0.50 diopter sphere will reduce a small residual deviation. In an exotropia with a slight overcorrection, the power of the plus lens can be increased or the power of the negative lens decreased temporarily. In an exotropia with an undercorrection, give the maximum minus correction, even to the extent of over-correcting the patient.

A patient that is orthophoric for distance, but still esotropic for near may be benefited by bifocals. In these cases find the minimal additional plus sphere over the distance

*Read before the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 12, 1955, Chattanooga, Tenn.

correction that will neutralize the deviation for near. It is best not to give more than a plus 3 diopter add. The bifocal segment should be large so that the child has no difficulty in its use, and should be higher than is fitted in the adult. I have used a straight top bifocal (cencor) but the Ultex A and AA, as well as a cement bifocal could be used.

For this type case D. F. P. has also been found to be very useful. This is used once daily at first and supplies a peripheral accommodation, so that no accommodative effort is necessary.² Iris cysts develop in some of these cases, but these disappear after the D. F. P. has been discontinued.

Vertical prisms may be used to correct a small remaining vertical deviation. Rarely can more than 6 to 8 diopters of prism be prescribed due to the distortions induced by the prisms. These may be given as clip-on prisms to determine the tolerance of the patient and also frequently one may find that on the return visit, additional vertical prism is required. Later these prisms may be reduced after the patient has received some vergence training.

Some authors, particularly Guibor³ have advocated prisms for a remaining horizontal deviation, and others¹ have found that small prisms help slight overcorrection for an alternating esotropia or exotropia. I have not had much success with either of these treatments and one usually finds that on return visits the patient requires more and more horizontal prism to maintain a parallel position of the eyes, which would support the contention that only by surgery can one permanently change the motor relationship between the eyes.

Total occlusion is not indicated in those patients who maintain parallelism of the eyes. However, if there is evidence of suppression or if one wishes to change dominance, partial occlusion may be beneficial. One may use lacquer on the glass of the dominant eye, or if the vision in the non-dominant eye is very low, it may be necessary to resort to Permafilm.

If immediately postoperatively in this group of patients one finds a small remaining deviation it is best to delay occlusion for about 4 weeks to give the patient a chance to develop simultaneous macular

perception on his own. However, if there is still a minimal deviation after this time, alternate occlusion is indicated, the patch being removed only when the patient is receiving active training. In this group of patients the further reduction in deviation that occurs with alternate occlusion is amazing, particularly if bilateral surgery has been performed.

Treatment

Orthoptic treatment is very beneficial in this group of patients. The newly created position presents a new sensorial relationship between the eyes, and a more adaptable one, which is more amenable to therapy. Unfortunately many children and parents have had their fill of formal training pre-operatively and will not accept postoperative training when it may be much more needed, and generally more helpful¹

This treatment may be divided into two phases,—office treatment and treatment that may be carried on in the home.

Office.

(1) The major amblyoscope may be used to combat suppression by using simultaneous perception targets or so-called Grade I targets (Ex. Lion in the cage). For developing amplitudes, Grade II targets or fusion slides are used. These consists of a pair of similar pictures, each with a different "control," e.g., rabbits, one with a bunch of flowers and no tail, and the other with a tail and no flowers. Also dots or circles may be used for amplitude training. With either simultaneous perception slides or fusion targets, normal retinal correspondence is being reinforced. This training must be carried out at the objective angle of the patient whether he is straight or still has a minimal deviation. Most orthoptists will start with peripheral targets and work down to macular targets, or work simultaneously with both. Frequently peripheral fusion is all that a true alternator will develop, as there is alternating foveal suppression.

(2) Tracing devices, two being the correct eye-scope and the senior cheiroscope, are used in combating postoperative suppression. In the correct eye-scope an image is presented to one eye and the patient is

asked to trace it. The instructor has to watch carefully that the patient is not alternating and should watch the eyes of the patient as well as the size of the drawing.

The cheiroscope may also be used for tracing. In addition, in younger children a bright toy, such as a butterfly, may be presented to one eye, the mental image being projected onto the base of the instrument. The patient then would take a miniature butterfly net and try to catch the butterfly.

(3) Other instruments that may be especially useful are the Pigeon-Cantonnet Stereoscope and the Walraven Bar Separator.

Home Exercises.

Even without an orthoptic technician the ophthalmologist may instruct his patients in these exercises:

(1) The first major group is the use of a red glass over the dominant eye to combat suppression or change dominance. This may be used in writing, reading, tracing and for television. For writing the patient writes with red ink or a Mongol pencil which cannot be seen by the dominant eye and consequently the usual suppressing eye has to be used. When reading, things seen with the dominant eye appear red, with the non-dominant eye white, and with fusion things should appear pink. For tracing the drawing is done in red and cannot be seen at all by the dominant eye. For the patient to be able to trace he must see the drawing with the nondominant eye. If used for television, the patient sees a pink screen if the vision is fusing; if the non-dominant eye is suppressed the screen becomes red and difficult to see.

Another home exercise is physiologic diplopia. In the beginning treatment a red glass may also be used. The exercise should be started within the range of fusion of the patient, that is, the near and distant object may be fairly close together. After the patient can obtain diplopia easily, the exercise may be performed without the red glass and at varying distances. This is an excellent exercise as it can be incorporated in many daily activities.

A third home exercise is the use of a bar for reading. Here the patient holds suitable reading material at a comfortable dis-

tance. A bar or pencil is held approximately half way between the reading material and the eyes. The patient is told to read the material. If it is necessary for the patient to move his head or book in order to see all the print he is suppressing one eye. When done properly the patient should be able to read the material without any difficulty and should appreciate physiologic diplopia in the form of two bars on the page. When teaching this exercise it is well to demonstrate suppression by covering one eye and allowing the patient to notice that the bar cuts off a certain portion of the page, and makes movement necessary to read the complete page.

A fourth home exercise and one that is used extensively in my practice for both tropias and convergence insufficiencies is the stereoscope. These instruments are relatively inexpensive and can be rented to the patients. We use dot targets, but the Keystone "base in and base out" series or the Wells or Guibor sets may be used.

The last instrument commonly used for home exercises is the Bausch and Lomb Ortho-fusor. This is a booklet of three dimensional pictures with control marks to detect and overcome suppression. Without polaroid lenses the picture appears blurred and has the appearance of a double-exposed photograph. With the polaroid lenses and with stereopsis, the two views are fused into a three dimensional picture.

A new device that may prove to be of great benefit as a home exercise is the use of polaroid filters and television. Here polaroid filters are placed over each eye and the television screen is divided into half by two filters, so that the patient only sees one-half of the screen with one eye, and the other half with the other eye. For him to see the whole picture, he must use the two eyes together.

In those patients who are straight for distance with their glasses on, and who have normal retinal correspondence, accommodation convergence dissociation training may be started. This has to be instituted in the office, but later carried on as a home exercise. Treatment is usually started on the major amblyoscope, the Remy Separator, and the diploscope and continued on the stereoscope. Later dissociation training is

continued off the instruments. Incidentally, I feel that when doing surgery particularly on a young esotrope, only the nonaccommodative element should be treated, otherwise in later life one has to undertake further operations to correct the previous overcorrection.

(2) With deviation to less than 10 diopters with anomalous retinal correspondence. The following management may be used:

As far as glasses are concerned, the same would apply as in the first class of patients except that bifocals would not be given with anomalous correspondence.

If the patient is straight or nearly straight, one might delay total occlusion for a week or two to determine if the anomalous correspondence shows any signs of changing to normal. After all, Travers⁴ has stated that the best way of treating anomalous correspondence is by operation and setting the eyes straight. If one finds that the correspondence is changing or has changed, one would treat the patient much as in the first classification.

However, if one still finds a well established anomalous correspondence, there are two choices: (1) settle for a good cosmetic result, or (2) begin total occlusion again, alternating it according to the visual acuity and dominance of the eyes.

Orthoptically, these are the most difficult cases to treat because of the small angle. The orthoptists frequently cannot be sure whether she is stimulating the objective angle or reinforcing the anomalous correspondence at the subjective angle. In the office the treatment is given on a major amblyoscope. One may either use the treatment of macular massage, chasing or kinetic stimulation, or the Walraven technic, of monocular diplopia. With macular massage or the Walraven technic, one is less apt to reinforce the anomalous correspondence. If after 6 to 10 treatments there is no sign of the anomalous correspondence breaking up, then there is no further need of using the orthoptist's time or the patients' time in treatment.

3. More than 10 diopters of deviation with either normal or anomalous correspondence.

The treatment in these cases differs little from the treatment that is used preoperatively, particularly if one still desires a

functional result.

Give the appropriate correction for refractive errors. Alternate occlusion should be worn at all times when the patient is not receiving therapy. In the office orthoptic treatment consists mainly in use of the major amblyoscope. If there is anomalous correspondence the previously discussed technic can be used. With the new motor angle, frequently the anomalous correspondence is more easily broken up. If there is normal correspondence, stimulation is given to combat suppression and to develop amplitude at the objective angle.

The recession type of exercise may also be used if the patient has normal correspondence and has fusion at any one point. This may also be continued at home under the direction of the parents.

Other home exercises are, monocular fixation if necessary and alternate fixation exercises. In addition if the patient has normal correspondence the following may also be given, diplopia practice, fusion within arm's length if possible, and the stereoscope.

If after these measures have been used, and the surgical results from the first operation have been stabilized, then further surgery may be decided on.

Summary

The type of postoperative strabismus cases and suggestions regarding the treatment of each have been discussed. Certainly it is not practical in every case to try to attain a functional result due to economic status, mentality, age and other factors. However, with the proper application of these suggestions, the ophthalmologist and patient may be rewarded with eyes that not only look straight but have comfortable binocular vision.

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CASE REPORT

Rhinosporidiosis of the Nose*

Harold T. McIver, M.D.,† Jackson, Tenn.

A. H., a 55 year old, white man was seen in our office on December 6, 1954, because of severe epistaxis from the right side. For the past three to four days bleeding could not be controlled by the family physician by means of anterior packs. The patient estimated that he had lost approximately one to two pints of bright blood from the right side of the nose.

Past history was noncontributory other than for a moderate hypertension during the past several years.

Physical examination revealed the blood pressure to be 180/100. Ear, nose and throat examination revealed three or four polypoid masses arising from the lateral wall of the nose and almost occluding the entire right side of the nasal cavity. These were extremely friable and bled easily when touched with an applicator.

Since the friable granulomatous masses gave the impression of malignancy, a biopsy was done. Following this it was necessary to insert heavy, anterior nasal packing on the right side in order to control the bleeding.

Twenty-four hours later the histologic report was that of a typical case of *rhinosporidiosis*. At this time the entire group of masses was removed as carefully as possible, and the stalk or attachment of each was carefully cauterized with 100 per cent silver nitrate stick.

Since then the patient has been free of epistaxis. He has had no discomfort, nor have the friable masses reappeared in the right side of the nose.

Discussion

When the pathologist gave me this report, it caught me completely off guard as I am sure it has many of you. The only time I had seen a section of this lesion was in the Army Institute collection which I studied for the American Board examination. I would like to briefly discuss rhinosporidiosis.

Definition: Conant defines rhinosporidiosis as an infection of the mucous membranes of the nose, eyes, ears, larynx, and occasionally of the vagina, penis, and skin, which is characterized by the development of friable, sessile, or pedunculated polyps.

Geographic distribution: Infection has been found in India, Ceylon, United States, Mexico, Argentina, South America, Philip-

pines, Malay States, Persia, Italy, England, and Scotland. The disease is endemic in India and Ceylon, and sporadic in the rest of the world.

Source of infection: The organism has not been cultured and has not been transmitted to man or animals by experimental inoculation. It occurs spontaneously in horses, cows, and mules. It has been suggested that the infection is carried by dust or water, also that the infection is primarily a disease of fish and that man and animals are accidental hosts.

Age, sex, race, and occupational incidence: The disease may develop at any age between 5 and 84 years and is seen most commonly in children and young adults. Males are more often affected than females. Sand divers of India are infected frequently, as are other individuals who habitually dive and swim in stagnant water.

Symptomatology: Naturally the symptoms vary according to the site of infection and the size of the tumor masses which develop. The nose is the most common site of infection and occurs in 72 per cent of the cases. The first symptom is that of a painless itching sensation in the nose, accompanied by the development of a profuse mucoid discharge. Purulent discharge is frequent, and bleeding is rare unless the lesion is traumatized. The lesions at first are sessile on the mucosa but, as masses develop, they become pedunculated by constriction at the base. The fully developed masses are globoid, polypoid, and those at the anterior part of the nose may hang down over the upper lip. If a growth develops in the posterior nares, it may project into the posterior pharynx which is seen as papillomatous tumor with or without mucinous bags. Sometimes these tumors may weigh as much as 20 grams. The more friable portions bleed easily when traumatized. The color of the lesions is distinctive and varies from pink to deep purplish red. The surface of the tumor is covered with mucus and generally shows papillary projections, giving it the appearance of a raspberry. Older lesions may become so lobulated as to resemble a cauliflower.

In the posterior pharynx and in the larynx gradually enlarging polyps may produce nasal obstruction, dyspnea, and dys-

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phagia; such lesions are usually secondary to nasal involvement.

The disease is limited to the eye in 14 per cent of cases. Small lesions developing in the conjunctiva may cause no symptoms and frequently are not detected by the patient. Larger growths cause symptoms similar to those produced by foreign bodies and may be accompanied by photophobia, lacrimation, and irritation of the conjunctiva. Conjunctival lesions in the early stages are small pale pink, flattened, granular nodules which are freely movable. Later they develop a deeper, almost splenic color and may be lobulated. The bulbar as well as the palpebral conjunctiva may be affected. The lids may be everted by excessive tumor formation. Infection of the lacrimal sac may block the duct and cause excessive lacrimation. The sac feels boggy and often resembles a mucocele.

Lesions of the ear resemble aural polyps and cause no symptoms except those due to pressure. As mentioned previously, lesions do occur on the skin, on the penis, the vulva, and in the rectum. The general health of the patient is not affected by local tumors and the lesions may persist as long as 30 years.

Diagnosis: The finding of characteristic large sporangia in polypoid masses is diagnostic.

Differential Diagnosis: The diagnosis of rhinosporidiosis is suggested by the finding on the mucous surface, especially the nose or eye, of polyps which are composed chiefly of friable pink or red granulomatous tissues which bleed readily. Ordinary mucous polyps and syphilitic condylomata must be considered in the diagnosis. The diagnosis

is easily established by direct examination of the material for the characteristic sporangia.

Prognosis: Rhinosporidiosis is rarely fatal. The lesions are uncomfortable and unsightly but cause little difficulty, except in instances when they are so large as to cause obstruction of the larynx or esophagus, or when unskilled attempts at removal are followed by fatal secondary infection with bacteria. Smaller lesions may spontaneously disappear after 8 to 9 years.

Treatment: The superficial early lesions can be removed by careful dissection. One author emphasizes that polyps should not be removed by a snare because of the danger of spreading the infection locally and introducing bacteria into the wound. In advanced cases extensive surgery supplemented by cauterization may be necessary. Antimony compounds have been tried without success. Briefly, the treatment has yet to be worked out.

Summary

I have presented this rare case of rhinosporidiosis with involvement in the nose for two purposes. First, to show how important it is to always do a biopsy upon any new growth in the field of otolaryngology and ophthalmology, and second, to show that such rare cases do occur in Tennessee. As far as we can tell from the literature, this is the seventeenth to be reported from the United States.

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CASE REPORT

Orbital Cellulitis*

Emmett M. Herring, M.D.,† Memphis, Tenn.

This is the case of a 12 year old white boy who was admitted to the hospital on November 27, 1955, four hours after a stick, thrown by another child, penetrated his upper lid and became fixed in the right orbit.

Examination revealed a ragged laceration of the skin of the lid with protrusion of muscle tissue. The lid was swollen, and little action of the levator palpebre muscle could be detected. There was a corneal abrasion. The fundus appeared normal, but could not be seen clearly because of the abrasion. Fifteen hundred units of tetanus antitoxin were given, and 300,000 units of penicillin, before operation the following day.

Exploration under general anesthetic showed the levator palpebre to be exposed but not disrupted. The stick had apparently been forced back along the superior surface of the levator. Several small foreign bodies were removed. Devitalized tissue was removed and 0.5 cc. of Wydase injected in this area. The skin was closed with a subcuticular silk suture; 600,000 units of long acting penicillin were given, and Neosporin ointment and ice packs were applied to the area.

The swelling of the lids and proptosis became worse with chemosis and prolapse of the conjunctiva. On the third postoperative day 300,000 units of penicillin were given and 0.5 cc. of Par-enzyme every six hours was begun. Swelling continued and heat lamp treatment was ordered for 15 minutes four times daily.

On the morning of the fourth postoperative day, the child was listless, enuretic, did not eat but would take liquids. Neck rigidity and a positive leg-raising sign were found; 300,000 units of penicillin were given and a neurosurgeon was called in consultation. Lumbar puncture revealed an opening pressure of 300 mm. of Hg. reduced to 150 mm. of Hg. at the close. The fluid was faintly bloody and contained 8 lymphocytes per cc. A tentative diagnosis of meningitis was made and cultures were made from the spinal fluid.

The suture was removed from the lid, and the wound was opened and probed. A small amount of bloody purulent material drained out. A smear from this showed a few Gram-positive cocci; it was cultured, and 300,000 units of penicillin were ordered twice daily and 250 mg. Achromycin orally four times daily were begun. X-ray study of the orbital roof and walls were made which revealed a small area of opacity which, after re-study and discussion was thought to be a fragment of bone detached from the medial orbital wall. The temperature rose to 101-102°.

On the fifth postoperative day the patient reacted well and felt much better. The orbital swelling had subsided slightly. The wound was probed (as it was daily for one week). Penicillin dosage was increased to 600,000 units twice daily. Cultures from lid-wound and spinal fluid were negative in 24 hours. It was decided a true meningitis had not developed and that he had had only meningismus.

On the seventh postoperative day there was little improvement, and 1 cc. of Combiotic was ordered twice daily, instead of penicillin. Par-enzyme was stopped.

On the eighth postoperative day the patient was better. The culture from spinal fluid was still negative; that from the lid-wound showed a gram negative bacillus of the fecalis group which was sensitive to most of the mycin drugs. The corneal abrasion seen on admission was healed. The patient was still unable to close the eye. Conjunctival edema and prolapse continued until puncture of conjunctiva was done to permit escape of fluid. The lashes were clipped.

On the eighteenth postoperative day swelling and chemosis seemed suddenly to become worse with more on the following day. Achromycin was discontinued (after 14 days of it) and 250 mg. Chloromycetin four times daily was begun. The following day there was no improvement, and 200,000 units of oral penicillin four times daily and 0.5 cc. intramuscular Varidase twice daily was begun.

There was gradual improvement until the twenty-eighth postoperative day when the patient's temperature rose to 101.2. Examination showed no cause, except soreness over the buttocks where injections had been given. (Questionable deep abscess on the right.) Combiotic was discontinued and streptomycin used.

The patient was able to close his eye for the first time on the thirty-third postoperative day. Streptomycin and Varidase were discontinued on the thirty-sixth postoperative day. Chloromycetin and oral penicillin were discontinued on the thirty-ninth postoperative day. The patient was permitted to go home on the forty-third postoperative day. At this time there was still some proptosis. Diplopia was present at all times, with 14 prism diopters of exotropia and 4 prism diopters of right hypotropia present for distance (Maddox rod). Vision: OD 20/30 J1; OS 20/20 J1. Fundus appeared normal in both eyes.

When seen on April 7, 1956, the patient reported occasional diplopia for near vision. He had no hypophoria, and only 4 prism diopters of exophoria for distance, and 12 prism diopters of exophoria for near (Maddox rod). The right upper lid drooped and had a thickened scar which seemed to prevent good elevation of the lid, although the levator action was good. The eyes

*Read before the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 10, 1956, Memphis, Tenn.

†Memphis Eye, Ear, Nose and Throat Hospital

moved normally in all directions. Vision: OD 20/40 corrected to 20/20 with plus .5 diopter cylinder axis 90 degrees (probably due to pressure from the upper lid); OS 20/20.

Excision of the scar from the upper lid is planned, but the family wishes to wait until the child is out of school to have this done.

Comment

Three things which are very important in handling cases of this type: (1) Large doses of antibiotics must be given from the beginning. (2) Adequate drainage from the wound must be promoted. (3) Close observation is imperative to deal quickly with complications which may arise.

STAFF CONFERENCE

Vanderbilt University Hospital*

DR. RALPH MASSIE: This 38 year old white woman re-entered Vanderbilt University Hospital for detailed studies related to her hypertension.

She gave a history of hypertension for at least 7 years. At times her blood pressure had been too high to be measured on the regular sphygmomanometer. She did fairly well without many symptoms during this entire 7 years, although occasionally she would have some scotomata and throbbing headaches, usually in the morning. At no time did she have any edema, marked dyspnea or paroxysmal nocturnal dyspnea.

When she was first admitted here, she had excellent renal function, and the only abnormalities on physical examination were a blood pressure of 260/180 in her arms and 250/140 in her legs. She had grade 2 eye-ground changes and some cardiomegaly but no other abnormality was noted.

She was started at that time on antihypertensive drugs, including Apresoline and Serpasil and was discharged to be followed in the Out-Patient Department.

About 3 months after this, she was re-admitted with an illness associated with chills and fever. A very thorough study in the hospital failed to reveal the cause of her fever. A liver biopsy showed a granulomatous disease suspected to be Hodgkin's Disease. She was ultimately treated with nitrogen mustard. About 3 months later a second liver biopsy was within normal limits and therefore no definite diagnosis of the granulomatous process or cause of her fever was established.

She was not on antihypertensive drugs from December, 1954, until approximately January, 1956. She visited the Out-Patient Department, where marked hypertension continued to be noted and she gradually developed more symptoms, particularly headache and blurring of vision. Her most recent admission to Vanderbilt was in June of 1956, when she was admitted for more careful study and for possible sympathectomy. The studies that were done during this hospitalization are the subject of this conference.

DR. SAMUEL S. RIVEN: This patient was first admitted to the hospital in 1954, at which time it was definitely established that she had hypertension and, as you recall, she had known hypertension for a period of about 7 years; her father had had hypertension, though he lived to the age of 80. This patient is presented this morning in order to review the methods used in the

clinical evaluation of hypertension in the Hypertension Clinic and subsequently on the wards. The history of this patient is significant in that she had so few cardiovascular symptoms. There was no story of angina pectoris, dyspnea or edema, and no cerebral vascular symptoms except for occasional headache and dizziness. She was not a tense or hyperkinetic individual, and close questioning failed to disclose any history of disturbance in renal function.

Physical examination revealed eye ground changes of grade I or II classification. When one utilizes the Keith-Waggoner classification, the differentiation between group I and IV is arrived at without difficulty, but the differentiation between group I and II is not easily ascertained. However, the fundus examination in this instance showed some arteriolar narrowing with A-V nicking. There was no evidence of any exudate or hemorrhage and no papilledema. In spite of the fact that this patient had a blood pressure of 260/140 to 150 on admission, and was known to have persistent hypertension for 7 years, the eye ground changes were not remarkable.

The reason for the hospital admission was to determine whether the vascular disease was progressing and, if so, how rapidly. That the heart size had increased was established by both physical examination and X-ray examination; furthermore, the electrocardiogram showed the typical left ventricular strain pattern. Repeated urinalyses were essentially negative. The nonprotein nitrogen determination was normal. The P.S.P. excretion was not remarkable. The Fishberg test showed good concentration. The cold pressor test depends upon stimulation of the vasomotor center. Within 30 to 60 seconds after the hands are immersed in ice water, the blood pressure rises 13 mm. in the normal individual and 30 mm. in hypertensive patients. In this patient it was repeated as is sometimes indicated for proper evaluation. The Amytal test consists of giving 0.2 Gm. of Sodium Amytal at 7, 8, and 9 o'clock at night, and recording the blood pressure whether the patient is awake, drowsy, or asleep. The record showed that there was no appreciable drop in the diastolic blood pressure at the end of 12 hours.

*From the Department of Medicine, Vanderbilt University School of Medicine and Vanderbilt University Hospital, Nashville, Tennessee.

The Regitine test was utilized in ruling out an endocrine etiology for hypertension. Five mg. of Regitine was administered intravenously and the blood pressure was taken every 30 seconds for 15 minutes. In individuals with pheochromocytoma the diastolic blood pressure drops about 30 mm. of mercury. Regitine reverses the hypertensive effects of epinephrine and nor-epinephrine. In this instance the test was normal. A psychiatric evaluation was not thought necessary. Intravenous pyelograms were equivocal on two occasions, but on a third examination an obstructive lesion was suspected. Intravenous urography for visualization of the upper urinary tract should be done in all nonazotemic hypertensive patients. However, on occasion, the test may appear normal in serious obstructive lesions of the renal artery. So much for the routine tests.

The purpose of this presentation is to emphasize some of the subtler tests indicated in the evaluation of a patient with hypertension. In the recognition of impaired renal function due to renal artery lesions, an important aid is the comparison of urine samples from both kidneys by urethral catheterization. The appearance time of injected dyes is delayed. The excretory functions of both kidneys may be compared by determinations of electrolyte concentrations of injected para-aminohippuric acid (PAH) in the separate urine samples. The differential or split kidney function tests were obtained by urethral catheterization in the supine and upright positions. Table 1 shows the results of

these differential kidney function tests in this patient. The patient had catheters placed in the right and left ureter simultaneously. Fifteen minute specimens were collected from the patient in the supine and upright positions and after injection of PAH in the supine and upright positions. As indicated, 4 cc. of PAH was given intravenously before the supine collection, and additional 3 cc. before upright collection. The table shows that the volume was practically the same, and the sodium concentration in milliequivalents per litre was the same in both the left supine and right supine positions. The potassium excretion is not remarkable and the same is true of the chloride. When both kidneys are compared after PAH, the difference in volume is not too remarkable, and the difference in sodium concentration in total milliequivalents is not marked. The total excretion of the PAH as determined in the individual catheter specimens was the same. The purpose of this test was to determine the excretory functions of both kidneys. They appeared to be normal in this patient.

Translumbar aortography is the only means of demonstrating the presence of defects of the renal arteries. The aortogram may demonstrate a filling defect in the renal artery, a narrowed lumen, reduction in the vascular system of the affected kidney, or delay in filling of the arterial system past the obstructing lesion.

I will now ask Dr. Joe Allen to discuss the use of translumbar aortography in visualizing the lower aorta, renal arteries and intrarenal vascular architecture.

Table 1
SPLIT KIDNEY FUNCTION TESTS

	Vol. cc.	Before P A H			Chloride			P A H Conc.	Total Mg.
		Sodium Conc.	Total Meq.	Potassium Conc.	Total Meq.	Conc.	Total Meq.		
Left Supine	48	6.87	0.330	7.75	0.372	6.7	0.321		
Right Supine	32	7.00	0.224	8.37	0.268	7.2	0.230		
Left Upright	37.5	21.85	0.818	7.37	0.275	18.2	0.683		
Right Upright	36.0	20.00	0.720	8.01	0.288	17.8	0.640		
After P A H									
Left Supine	32.5	13.7	0.445	18.1	0.587	4.8	0.156	361 mg. %	116
Right Supine	25.5	12.25	0.312	19.0	0.485	6.7	0.171	371	94.5
Left Upright	24.0	25.9	0.622	20.5	0.492	17.6	0.422	332	79.5
Right Upright	20.0	28.2	0.564	21.4	0.427	18.3	0.366	358	71.5

Note: P A H was administered in one I V injection and was not a constant drip.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Nashville Invites You To the 122nd Annual Meeting April 7-10

● The 122nd Annual Meeting of the Tennessee State Medical Association will be conducted in Nashville from April 7-10. The Maxwell House will be headquarters with the Noel Hotel and Hermitage also being locations where other important activities will occur. Plans and arrangements are under way for the annual meeting and participants in the program of the Scientific Sessions and particularly the specialty societies are urged to prepare their program material and forward it to the office of the Executive Secretary.

House of Delegates Session to Start In Early Afternoon On April 7

● A slight change has been made in the opening session of the House of Delegates. The House will begin at 1:00 P.M. promptly on Sunday April 7th and continue with its business throughout the afternoon. The schedule is being arranged in order that the House can adjourn without an intermission for dinner. It is believed by the Speaker of the House of Delegates that if the program is kept to schedule, even though the session holds a little late in the evening, it will be better to conduct the affairs of the House of Delegates to completion rather than an adjournment for dinner. Registration for members of the House will begin at 12:00 Noon on Sunday, April 7. By beginning the session of the House of Delegates on Sunday afternoon, it will enable any member of the House to attend Church on Sunday morning or to arrange their schedule for arriving at the first session of the House prior to 1:00 P.M.

General Scientific Meetings

● The general scientific meetings will be conducted on the mornings of April 8-9-10 with the afternoons of the same days being made available to the scientific programs of the specialty groups which will meet concurrently with the Association.

Specialty Societies will have three afternoons for their scientific meetings and are urged to conduct their social hours and banquets on either the evenings of April 9 or 10.

President's Night

● President's Night will follow along similar lines as the plan inaugurated last year. Prior to 1956, President's Night had been only a meeting and a program. However, last year the President's Night program was preceded by a banquet and this will again be conducted this year at the Richland Country Club. An outstanding guest speaker has been secured. All doctor members and their wives are invited to attend the annual banquet as well as any other members of the Woman's Auxiliary to TSMA. The President will make his annual address to the Association. In addition, the Health Project Contest Award will be given and also the Outstanding General Practitioner in the State will be recognized.

Maxwell House To Be Headquarters

● TSMA has optioned all available space at the Maxwell House for the Association's general headquarters. The exhibits, the general scientific sessions, the House of Delegates, and a number of the specialty society programs will be conducted in the Maxwell House. In addition, a large block of rooms has been obtained for TSMA members in the Maxwell House.

**Make Your
Reservations Now**

● In addition to the Maxwell House, a large block of rooms has been reserved for those planning to attend the 122nd annual meeting. The rooms are available at the Noel Hotel, directly across the street from the headquarters hotel and also at the Hermitage and Andrew Jackson Hotels. A total of approximately 300 rooms are reserved in the Nashville hotels for use by those planning to attend. Write directly to the Maxwell House, Noel or Hermitage for your reservations.

**President's Guest
Speaker an Outstanding
Personality**

● Dr. R. B. Wood, President of TSMA has invited for his speaker, a very interesting and widely known person. He is Dr. Clifford E. Barbour, President of the Western Theologic Seminary of Pittsburgh, Pennsylvania. Dr. Barbour is a delightful speaker and members of the Association will want to attend the President's Night banquet to hear him.

**Important Issues
To Be Brought
Before House of
Delegates**

● A number of interesting reports and other important business will be presented to the House of Delegates. Members of the House of Delegates includes (1) the elected delegates representing the local medical societies, (2) officers, (3) councilors, (4) members of the Board of Trustees, (5) past-presidents, (6) the commissioner of public health from the state of Tennessee and (7) delegates of TSMA to the American Medical Association. The second session of the House will be conducted at 9:00 A.M. in the Maxwell House on Tuesday, April 9th, in the Old South Room.

**Don't Forget the
Exhibitors**

● If it were not for the technical exhibitors, registration for the annual meeting would be approximately \$20.00 per member. As the same for everything else these days, the cost of the annual meeting seems to increase yearly. Don't forget that the exhibitors pay the entire cost of the annual meeting. Show your appreciation by visiting each exhibitor's booth. It will not only be interesting but valuable information to you. A total of 44 companies have reserved exhibit space for the 1957 meeting. It cannot be too strongly stressed that it is important for doctors to visit the exhibit booths and to show interest in these firms. The exhibitors are an integral part of our Association meeting and you will be helping your state association and its activities if you will merely visit with the companies represented.

**Thirteen Specialty
Societies to Meet
Concurrently with
TSMA**

● During the three-day meeting, other attractions will include meetings of the various specialty organizations and the annual meeting of the Tennessee Medical Foundation. Watch the columns of the March Journal for details of the scientific program and other features of the annual meeting which will be announced.

**Important Legislative
Conference with
Governor**

● The TSMA Legislative Committee has been extremely active prior to the opening of the Tennessee General Assembly. On December 27th, the Chairman of this Committee, Dr. W. W. Wilkerson, Jr., of Nashville, along with other members of the Committee, our attorney and members of the TSMA staff met with the Governor to outline the legislative program of the Tennessee State Medical Association for 1957. The program was warmly accepted and without any doubt, the outcome of this conference will prove to be effective in the legislature.

**County Society
Secretaries Urged to
Report Officers and
Delegates**

● A questionnaire was mailed from the headquarters office early in January to secretaries of all county societies requesting the names of the officers for 1957 and delegates and alternates to the House of Delegates of TSMA.

A number of societies have forwarded this information, but several have not yet reported. Since the information is vital, particularly naming of the members to the House of Delegates, county society secretaries who have not reported this information are urgently requested to do so at the earliest possible time.

Public Service

THE TENNESSEE TEN

Administration Backs Indigent Increase

● During the past twelve months the public service committee culminated a year-long campaign to get increased funds for the indigent hospital service program by getting Administration backing for indigent hospital bills in the form of a total appropriation of one-million-five-hundred and sixty-three thousand dollars annually—or, four times the amount originally requested at the beginning of our campaign.

Victory Not Yet Complete

● This victory marked a major advance in the campaign which the doctors of Tennessee have carried on for many years on behalf of the sick and the suffering who are unable to pay hospital bills. However, the entire campaign is not won yet. It will require the redoubled efforts of the Committee during the coming two years, to put the program through to its final phase, at which time it can be said with complete honesty that no person in the State of Tennessee will go without hospital care for lack of money to pay his bills. Only then can it be said that our hospitals are on firm financial footing, and only then will rates for the paying patient be in line with the true cost of services rendered.

Press Award

● I would call your attention to the Tennessee Medical Press Award which was awarded last January for the first time. Recommended by the Public Service Committee and approved by your Board of Trustees, the Award has substantially increased the interest of newspapers and newspaper men in the skill of good medical news reporting. Literally hundreds of magazine and newspaper stories on the progress, the history, and the human interest surrounding medical practice in this state and this region have resulted from the encouragement and cooperation the Award has nurtured in its first year. The winner was Mrs. Ida Clemens of The Commercial Appeal in Memphis. Mrs. Clemens' distinguished news reporting in the field of medicine during 1956 won the acclaim of the five physicians and the ten editors and publishers who control the Award. The AMA will call the attention of other state medical societies to the Award by featuring it in the Public Relations Doctor Exchange. The purpose of this AMA service is to call attention to outstanding examples of public service achieved by state and county medical societies.

TV Relations

● Yet another new venture by your public service committee has borne the fruit of success. I refer to our television relations, which last year was in its infancy.

TV Film

● Today each of us can point with pride to a program for television relations which is second to none when the resources at our command are considered. We produced a thirteen-minute film for television, distributed it to all fourteen television stations in Tennessee, and had the notable pleasure of seeing the film televised by every single station, reaching an audience of more than five million persons. People in Georgia, Virginia, North Carolina, Kentucky, Arkansas, Mississippi and Alabama are now familiar with the Tennessee State Medical Association's part in sponsoring the Volunteer State's indigent hospital service program.

Sun Doctor

● With a staff of two—our public service director and our public service secretary—half-hour dramatic shows were

written and produced. One series, "Sun Doctor," was written and directed by the public service director and produced by a Knoxville station. This summer stations in all other viewing areas want the little dramatic series of six shows which explain common summertime ailments in terms which are both dramatic, simple and appealing.

Free Time

● At a conservative estimate, the free time donated to you by our television stations during the past twelve months would have cost us easily more than a half million dollars if we had been required to buy it, as most other organizations are. Our budget last year for television was \$500. This year the Trustees have allowed \$1,000 to finance this phase of our public service program. Certainly this is the biggest bargain in public service we have ever had the good fortune to enjoy.

Without the help and cooperation, as well as financial support the public service director was able to get from four other organizations, our film alone would have cost \$22,000—a price which is, of course, far beyond the reach of your public service committee which has a little less than \$18,000 annually to carry out a state-wide program.

Education Through the Press

● Activities with other information media have not been neglected either. Our education campaign through the press these past months saw hundreds of news stories and editorials run by the very fine newspapers of the state. We now have a practicing physician in each community where a newspaper is published. These men have established themselves as contact persons for the newspapers. By making an occasional friendly telephone call to the editor they have been able to arouse tremendous interest in our problems among the newspapers. When we mail out an editorial or a news release, we see to it that the contact physician for each newspaper receives a copy of the release also. If there are any questions, or if a local angle is needed, the editor knows whom he should call.

The improvement and progress which our press relations have made since this system was established a few months ago cannot be over estimated. We are now truly on good terms with the press.

Public Service Director to Join AMA Staff

● In leaving the Tennessee State Medical Association this month to join the public relations staff of the American Medical Association at Chicago, I wish to thank everyone who has given me assistance, cooperation and advice in carrying out my duties here. May I ask your further help and cooperation for my successor, who had not been chosen at this writing. Your help, your thinking, and your cooperation are the elements which have made your public service program the success that it is. The future of the program is in your hands, and its future, therefore, is bright indeed.

Thanks Due Many

● Finally, may I remind you of the cooperation of other groups during these past months, the result of which has been an improvement in public attitudes toward many TSMA projects. Thanks are due the Tennessee Taxpayers Association, the Tennessee Press Association, the Tennessee County Services Association, the Tennessee Hospital Association, the Tennessee Municipal League, the Tennessee State Dental Association, our nursing organizations, the State Department of Public Health, the heart and cancer associations, as well as many others.

Governor and Mr. Fisher

● We are also indebted to our state senators and representatives, to Governor Frank G. Clement, and to Mr. Douglas Fisher, his assistant, for the many favors and the complete cooperation they have given us in all matters affecting the public health and the medical profession.

Thank you all, again, and good-bye.

J. H. FORD, JR.
Public Service Director

DR. ALLEN: There isn't much to say about this. I believe that these aortograms are essentially normal. Approximately the same amount of dye goes to each side. The right renal artery makes a peculiar little angle, but many of them do, and there is an area of irregularity at the entrance of the left renal artery. However, nothing has prevented an apparently adequate blood supply from reaching both kidneys. In regard to the other films, the later pyelograms are normal except for perhaps a little deformity in one area. A fetal lobulation which may be associated with this abnormal vascular "take-off" is present on the right side. I think that these X-rays are probably as valuable physiologically as they are anatomically. I think they are normal.

DR. RIVEN: Finally, percutaneous renal biopsies are useful in the differentiation of primary parenchymal renal disease such as pyelonephritis as the chief cause of hypertension. The usefulness of this procedure is apparent. If one can obtain good biopsies, it is possible to differentiate between parenchymal disease of the kidney and disease of the renal artery. I don't believe this patient had a percutaneous renal biopsy preoperatively; however, a renal biopsy was taken at the time of operation and showed pyelonephritis. Dr. Newman, will you discuss the split kidney function test and the renal biopsy.

DR. ELLIOTT NEWMAN: I'd like to ask Dr. Allen about the diagnosis of pyelonephritis by X-ray study. The biopsy specimen showed the pyelonephritis was on the left side. How do you tell pyelonephritis by urogram?

DR. ALLEN: Well, usually in acute pyelonephritis you do not see any abnormality at all. It is only when secondary scarring occurs, and then the calyces are shaped like a little disc that balloons out. That is sometimes the only criterion. It is difficult in borderline cases to determine the presence of pyelonephritis.

DR. NEWMAN: I have often wondered how you did it. At least the pathologist agrees with you in this case. Dr. Riven brought up the problem of split renal function, asked why we were going to so much trouble to characterize renal function, and I suppose the practical value of this is

questionable as we don't have any immediate demonstration of the practical value of these precise split functions. We all know that sporadically in the literature there are cases reported that have unilateral hypertension due to renal disease or renal artery disease, which have been "cured" by removal of the kidney or recently by repair of the renal circulation. The reasoning behind this approach goes back to the old Goldblatt idea. It has been our feeling that the Goldblatt hypothesis has never really been investigated in this large group of people whom we blindly diagnose as having essential hypertension. Of course "essential hypertension" is a meaningless term. The idea behind split function tests is this. There are obvious cases of renal disease which can be picked up by gross examinations. In addition, in some patients there may be more subtle changes in renal function which we may be able to pick up by these more precise tests. Thus, we may carve out a larger group of people with demonstrable physiologic and anatomic lesions from this large group of essential hypertensives.

I just want to make one comment about something I did not realize about the renal circulation, although I'm sure the surgeons have recognized it for a long time. Having looked into the literature on renal circulation recently, I found that the concept that there are 2 renal arteries coming off the aorta to supply the kidneys is completely wrong. Dr. Sam Clark gave me some wonderful references on the anatomy of the circulation of the kidney. When you look at the anatomic literature, you find that two renal arteries, two simple renal arteries, coming off the aorta is really almost an accident. It is more of an anomaly than multiple renal arteries. Actually in a large series of examinations of the renal arteries, at autopsy, only 35 per cent of people have that simple arrangement. I do not understand the embryology of the kidney, but apparently when the circulation of the kidney develops a lot of sprouts come off the aorta. And it is almost an accident if just two sprouts come off. There are all sorts of anomalies. These are representative samples of what is found at autopsy,

(Continued on page 64)



MAXWELL HOUSE HOTEL

Major meetings and all scientific and technical exhibits will be held in the famous Maxwell House. OBTAIN YOUR RESERVATIONS NOW.

Here are some of the interesting activities in store for physicians planning to attend the annual meeting in Nashville . . . Programs in which 13 Specialty Societies will participate . . . three full days for General Scientific Sessions for Doctors in all branches and specialties. Scientific and Technical Exhibits that will prove interesting and helpful . . . Specialty Societies Banquets and Social hours . . . Meetings of the House of Delegates . . . The Board of Trustees meeting . . . Presidents Night . . . Interesting exhibits . . . Meetings and Sessions of the Woman's Auxiliary . . . Annual meeting of the Tennessee Medical Foundation . . . Open house of the new headquarters office.

THE 122ND ANNUAL MEETING
ARRANGE NOW TO ATTEND

*Write or contact the Maxwell House—Noel—Hermitage or Andrew Jackson Hotels
for your reservations.*

*Activities
Will
Center
← Here
Nashville
Invites You
for the
1957
ANNUAL
MEETING
Tennessee
State
Medical
Association
April 7-10
Nashville*

General Program Outline of the 1957 Annual Meeting Tennessee State Medical Association Nashville, April 7-10, 1957

SCHEDULE OF MAJOR EVENTS

THE MAXWELL HOUSE—NASHVILLE—THE HEADQUARTERS HOTEL

(Tentative Times)

SUNDAY, APRIL 7, 1957

10:30 A.M.	Tennessee Society of Anesthesiology—Old South Room
12:00 Noon	Registration for House of Delegates—Main Lobby
1:00 P.M.	Opening Session of House of Delegates—Colonial Ballroom
2:00 P.M.	Woman's Auxiliary to TSMA—Registration, Hermitage Hotel
2:30 P.M.	Woman's Auxiliary, Finance and Budget Committee—Hermitage Hotel
3:00 P.M.	Woman's Auxiliary, Revisions Committee—Hermitage Hotel
4:30 P.M.	Woman's Auxiliary, Awards Committee—Hermitage Hotel

MONDAY, APRIL 8

8:00 A.M.	Registration—Maxwell House, Main Lobby
9:00 A.M.	Exhibits Open—Main Lobby and Mezzanine Floors
9:00 A.M.	General Scientific Meeting—Colonial Ballroom
9:30 A.M.	Woman's Auxiliary Breakfast and Preconvention Board Meeting—Louisiana Room, Hermitage Hotel
10:00 A.M.	Meeting of Public Health Council—Room 341, Cordell Hull State Office Building
12:30 P.M.	Tennessee Radiological Society—Noel Hotel, Parlor C
12:30 P.M.	Tennessee Psychiatric Society—Parlor C-2
12:30 P.M.	Tennessee Society of Pathologists—Parlor C-1
12:30 P.M.	Tennessee Diabetes Association—Parlor A and B
1:00 P.M.	Tennessee State Pediatric Society—War Memorial Building
1:00 P.M.	Tennessee Academy of Ophthalmology and Otolaryngology—Noel Hotel, Assembly Room
2:00 P.M.	Tennessee Academy of General Practice—Old South Room
2:00 P.M.	Tennessee Chapter, American College of Surgeons—Vanderbilt Hospital Amphitheatre
4:00 to 6:00 P.M.	TSMA Headquarters Building, Open House—112 Louise Avenue
7:00 P.M.	President's Night Banquet—Richland Country Club

TUESDAY, APRIL 9

7:30 A.M.	Woman's Auxiliary Breakfast, Honoring Past Presidents—Hermitage Hotel
8:00 A.M.	Registration—Maxwell House, Main Lobby
9:00 A.M.	Exhibits Open—Lobby and Mezzanine Floors
9:00 A.M.	General Scientific Meeting—Colonial Ballroom
9:00 A.M.	House of Delegates (Second Session)—Old South Room
9:00 A.M.	Woman's Auxiliary, General Session—Hermitage Hotel
12:15 P.M.	Tennessee Academy of Ophthalmology and Otolaryngology—Noel Hotel, Assembly Room
12:30 P.M.	Tennessee Thoracic Society—Parlor C-1
1:00 P.M.	Tennessee Academy of Preventative Medicine and Public Health—Parlor A and B
1:00 P.M.	Scientific Meeting, Tennessee Chapter, American College of Surgeons—Colonial Ballroom
3:00 P.M.	Tennessee State Pediatric Society—Vanderbilt Hospital Amphitheatre
6:30 P.M.	Social Hour and Banquet, Tennessee Chapter, American College of Surgeons—Colonial Ballroom
6:30 P.M.	Social Hour and Banquet, Tennessee Academy of General Practice—Noel Hotel

WEDNESDAY, APRIL 10

8:00 A.M.	Registration—Main Lobby
8:00 A.M.	Membership Meeting of Tennessee Medical Foundation—Old South Room
9:00 A.M.	Exhibits Open—Lobby and Mezzanine Floors
9:00 A.M.	General Scientific Meeting—Colonial Ballroom
9:00 A.M.	Board of Trustees Meeting—Parlor A and B
9:30 A.M.	Woman's Auxiliary, Post Convention Board Meeting—Hermitage Hotel

(Continued from page 61)

and they vary all the way from multiple branches of a single trunk to 4 or 5 separate branches coming off the aorta in various regions. Occasionally branches come off the iliac arteries. A very frequent anomaly in about 25 per cent of people is a branch coming off the aorta in addition to the main renal artery. I think we do not want to spend too much time on this because there is a lot of other discussion.

Well, the point of this is that at least I, and I suspect a lot of others, have had a false concept of the renal circulation. As you can see, the possibilities for derangements in renal circulation are manifold. Now the thread of the Goldblatt concept has been carried only to a certain extent through human clinical physiology and hypertensive disease. Blackman was one of the first people to take it up and to show that in 80 per cent of persons dying of hypertension there was a stenosis of the aortic renal artery orifice, whereas only 20 per cent of people dying without hypertension had it. This has been confirmed. We know that the Goldblatt phenomenon has something to do with interference of renal circulation. We do not know whether it is diminished blood supply or whether it is a change in pulse pressure dynamics. But we do know it occurs, and it occurs in human beings. All these split function tests and anatomic studies are an attempt to see if there are more instances of unilateral disease which may be the cause of some of the cases of essential hypertension. The reason for doing these tests in the supine and upright position, which I think has not been done before, is that so often we find patients with severe hypertension who are put to bed, and their pressure gradually comes down in several days or a week or two. Then they get up and around again and the pressure goes up again. Part of our thesis or philosophy is that a lot of clinical studies and too much clinical physiology is bedridden. We ought to find out what goes on in the position that we assume at least part of the time.

DR. RIVEN: Dr. Newman, will you comment on the results of this kidney function test?

DR. NEWMAN: One of the things that

other people have reported, particularly Howard from Hopkins, is a diminution of excretion of sodium from the kidney with a deranged circulation. He has a series, I think six in number the last time I saw him, of patients who had ischemic infarcts with intermittent ischemia in the kidney. On the side with deranged circulation, sodium excretion was markedly diminished. That may be related to the well known fact that if the filtration rate is diminished the excretion of sodium diminishes. We thought perhaps in the upright position we might be able to demonstrate a striking difference in sodium excretion from that which would be demonstrated in the supine position. When you stand up you get an antidiuresis and the concentration of everything goes up. The important thing is the difference in the two sides. The curious thing here though, was that the total sodium excretion went up when the patient was upright. We think that this technic of ureteral catheterization is fraught with a lot of inaccuracies and difficulties. We suspect that when the patient stands up the catheters may drain better, and a little more urine may pass out. I do not know whether that is possible or not. Of course these are not quantitative collections, and the calyces, pelvies, and ureters are full of urine, and since they are short term collections there might be errors in volume. I think this may be the explanation. There is a difference in this patient from the other three we had. In the others the concentration of the sodium dropped when they stood. This patient is the only one in whom it went up.

DR. RIVEN: Dr. Scott, would you care to comment about the aortograms and also what you found at operation?

DR. SCOTT: Well this certainly ought to be split with Dr. Harris because his comments on the kidneys in particular would be more to the point than mine. We were not quite as convinced as our X-ray man was that the aortograms were totally normal. First of all on the right side there was this peculiar looping of the renal artery. On the left side there was a small plaque one could make out in the first few centimeters of the left renal artery. As far as we could tell both the aorticorenal junctions were normal as far as the diameters

were concerned. We felt that this patient did deserve a follow-up on this type of study. It would give us an opportunity to not only find out in her specific case if there was something that we had missed on aortography, and the other precise tests on renal function, but also to see how accurate aortography was in actually depicting the status of the renal arteries. If we do not find anything that could be altered physically in a beneficial manner for the patient in the way of renal arterial or aorticorenal obstructive elements, we could go ahead and do the first stage of the thoracolumbar sympathectomy. Our main interest, other than in ruling out the types of things that have been mentioned by Dr. Riven and Dr. Newman, such as pheochromocytoma, hypoplastic kidney and so on, really has been in the aorticorenal arterial obstructive possibilities in these people with so called essential hypertension. The plan that we followed first of all was to obtain an exposure which would make it possible to examine both kidneys, and if possible both adrenals, and to examine the aorta and the renal arteries simultaneously. This could be accomplished in this particular patient with the same type of incision that is used for a resection of the aorta or for aneurysm, namely a long vertical midline incision which is essentially a xyphoid-pubis type of affair. This was done on this patient, and I might say that the finding that she had an incidental left periduodenal hernia which is somewhat unusual facilitated the exposure of the aorta tremendously. After reducing incarcerated loops of small bowel we found that Nature had done the dissection in the region of the aorta and the renal arteries very nicely for us. With the bowel displaced from the periduodenal hernial sac, it was very easy to expose the aorta and both renal arteries directly with a minimum of retroperitoneal fat obscuring the direct view of these structures. Then the plan was to examine both kidneys and adrenals, biopsy the kidneys, examine the renal arteries and the aorta, measure pressures simultaneously with a Strain gauge, with a needle in the aorta and in the renal arteries somewhat distal to the origin of the renal artery to see if one could detect a gradient some degree of obstruction at the

junction of the renal artery and the aorta. And then, if all this was in order, to extend the incision up into thoracic space and to carry out a thoraco-lumbar sympathectomy. That was essentially the sequence of events that was followed in this patient. I will let Dr. Harris comment on the actual findings at operation. I am sure that most of this audience is familiar with the fact that several instances now have been reported in which an arteriosclerotic plaque occluding thrombus has been removed by the technique of thromboendarterectomy, and in one instance, at any rate, re-establishment of seemingly adequate blood flow through that renal artery with a reduction of hypertension. In another instance, a congenital stenosis of a renal artery was encountered in a child and this was excised and repaired, as I recall, by direct anastomosis. I have forgotten whether a graft was used in that case or not. This points up the possibility, for instance, of considering arteriosclerosis as being not just a generalized affair but a disease which is sometimes segmental. This concept of segmental disease borrowed from the realm of peripheral arterial disease and carrying it to the renal arteries and their relations to the aorta gives us hope that something can be done along these lines both from the diagnostic and therapeutic point of view that will shed some light on essential hypertension.

DR. HARRIS: I just want to say that the lower part of the right kidney gave the appearance, on aortography, of an infarct, but at operation it looked more like a fetal lobulation. I think the left kidney was the one that showed pyelonephritis. The right one was normal. Interestingly, we found that the left renal artery had a palpable plaque at the "take-off" from the aorta. Although there were no pressure differences, I think that we were not sure then that we should not go ahead and resect that area and re-implant it. I do not think we know yet whether that would have been the proper thing to do. In the animal experiments I understand that it takes 60 per cent occlusion before one gets any pressure differences, and it was not felt that this patient had that much of an occlusion. But still it is an unanswered question.

There are two questions to be considered

regarding percutaneous renal biopsy. The first is the adequacy of such material for pathologic interpretation and second is the morbidity of such a procedure. I think there is general agreement that although many times the pathologists cannot agree as to what the actual lesion is, they are adequate as a rule to give a definite diagnosis. One thing that has made it a little difficult so far is that pathologists are not used to seeing a lesion at this stage and fresh material is a little bit different from postmortem material. The other is the morbidity attached to such a biopsy has proved to be very low. We have done 12 biopsies on 10 patients (2 patients have had each kidney biopsied), and have had only one serious complication thus far. This consisted of gross hematuria for a week or so after the biopsy, requiring surgical intervention. We explored that kidney and found that there was an aberrant vein running posterior to the pelvis, and I believe that had been punctured in obtaining the biopsy. We ligated this vessel and the patient got along very well after that. The others have all, with one or two exceptions, had microscopic hematuria but no other complications. Would you care for me to comment on the pressures that were taken at the time of operation? We have a slide demonstrating these. I think it is self-evident that these pressures, as Dr. Scott said, were taken with rapidly responding manometers, and the aortic pressure was simultaneously compared with the left and right renal artery pressures; no significant difference seemed to occur in them. Incidentally, I might say, that as far as I know this is the first time anybody has measured the renal artery and aortic pressures simultaneously with accurate gauges at a surgical operation. I do not know why it has not been done in the past. If anyone here knows whether it has been done before I would like to know it. Are you making any follow-up or studies of hypertension markedly reduced by drugs?

DR. RIVEN: No, we have not tried that. Possibly hypertension exists to keep the renal artery open, and if the patient's blood pressure is lowered with hypotensive drugs, the renal artery with a plaque would carry an inadequate circulation. One should determine the unilateral function after lowering the patient's pressure. It could be that one of the reasons that hypertension exists, is to maintain the adequacy of the renal perfusion, the blood flow, the pulse pressure as well, and that in its absence there would be a change in renal function.

DR. MASSIE: What can be done with the patient now that her blood pressure is back up to about 270 diastolic in spite of the fact that she has had a unilateral thoracolumbar sympathectomy?

DR. RIVEN: Well, before we answer this question, may we conclude this presentation by stating that this is the first patient who received the routine work-up for a patient with hypertension plus the other tests described above. We invite your cooperation so that those of us who are working in the Hypertension Clinic will be able to screen more patients with hypertension, and perhaps identify some with unilateral renal artery disease. Dr. Massie has told us that this patient had a febrile course for some time. This might have been due to hydralazine or Apresoline which she had taken for some months. This drug may produce a lupus type of disease. I believe that it should be emphasized that although the liver biopsy in this instance showed the possibility of Hodgkin's Disease, the temperature became normal before the patient received nitrogen mustard.

This patient did not receive any benefits from the use of antihypertensive drugs. She will have a bilateral lumbar-dorsal sympathectomy. A better response to antihypertensive drugs is anticipated. Are there any other questions? If not, it is time to conclude, and I want to thank Dr. Newman, Dr. Scott and Dr. Harris for their participation.

President's Letter

DEATHS FROM TRAFFIC ACCIDENTS



DR. WOOD

It was gratifying to note in a release from the Tennessee Director of Statistical Services that there had been a marked decline in deaths from traffic accidents in Tennessee during the year 1956, namely 735 versus 900 for the

first 11 months of each year. This reduction has largely been from stricter enforcement of laws regulating traffic control and from education of the public at large, perhaps aided by visual measures placed at strategic areas in the form of signs "Radar Enforced."

When one considers that in this state approximately 1,000 lives per year, most of whom are of a younger age group with a potential of many years of work days expectancy, the resulting economic loss, ignoring the emotional stresses, losses that in most instances are avoidable, it should cause serious reflection on the part of all groups, as to whether we are giving this problem sufficient attention. On the national level, the National Safety Council predicts that in 1966 there will be 53,000 deaths in the United States from automobile accidents and in the search for the tragic cause for this slaughter, two factors stand out above all the rest, namely speed and drunken driving. No cause for wonder exists when the chief claim for dominance in the automobile selling field is apparently claims of power, more power, boasts of speed, greater acceleration, more miles per gallon, greater durability for unexpected abnormal tests of performance—all an unconscious appeal to the inherent daring instinct of human beings, and when these smoldering ideas become activated in a consciousness whose inhibitions are lulled by drink, catastrophe results.

What can be done to reduce the mortality rate? The answers have partially been given by Woodward and others in current

articles. (A.M.A. 163, No. 4.) These include:

1. Design of safety factors in cars.
2. Stricter legislation for the drunken driver who was responsible for probably 25% of all fatal accidents.
3. Medical screening for applicants for license to determine their continuing fitness to drive automobiles. This should include the testing of the eyes for color and total vision, the ears for deafness and for labyrinth disease, the nervous system for evidence of Parkinson disease, Tabes, partial paralysis; the neuromuscular disorders, history of alcoholism and even the psychology of driving are important factors. Medical illnesses such as Diabetes requiring Insulin, definite Arteriosclerosis, sensitive carotid sinus, frequent attacks of Paroxysmal Tachycardia and other similar cardiac illnesses, should all be excluded by the examination or a written statement certifying by the family physician the absence of all these diseases. Epilepsy, illnesses calling for the use of drugs which may produce vertigo, neuromuscular disorders that inhibit normal reaction time and many other needless to name, would remove potential sources of danger from the street if proper regulations were enforced.

Finally, there should be greater extension of the present educational programs that exists, teaching the young as well as the adults in the proper art of driving.

All of these things however, will not control the sudden conversion of a normal individual into a Barney Oldfield when he settled behind the wheel of a car with excessive horsepower and a super charger, or the pre-occupied mind hurrying to nowhere, or the impetuous youth with a flare for showmanship.

R. B. Woodward M.D.

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FEBRUARY, 1957

EDITORIAL

SMOKE AND FIRE

The possible relationship between smoking (and its noxious by-products) and the occurrence of lung cancer and coronary artery heart disease has been discussed repeatedly in the medical literature during the past few years. At intervals these discussions are carried into the nonmedical press, and the result is reflected in a temporary fall in the use of tobacco as shown by a decrease in sales by the major tobacco companies, again confirmed by the fall in the price of their stocks on the New York Stock Exchange. The relative brevity of these decreases in smoking confirms either the fact that doctors and the public forget easily, or do not accept the statistical analyses, or that the zest for smoking outweighs the fear of lung cancer or heart disease.

Doll and Hill¹ made an analysis based on

¹Richard Doll, M.D., and A. B. Hill, C.B.E.: Lung Cancer and Other Causes of Death in Relation to Smoking—a Second Report on the Mortality of British Doctors, Brit. M. J., p. 1071, 1956.

a selected group of doctors of the United Kingdom. They sent questionnaires, in 1951, to 59,600 doctors inquiring about their smoking habits. Among the 41,024 replies, 40,701 were sufficiently complete to be utilized. Following this section of information, was a study of the details of each physician's death as it was reported. This information was supplied by the registrar general.

The observation and analysis has extended from October, 1951, to March, 1956. During this period 1,714 deaths occurred in men above 35 years of age, and 82 of these were due to lung cancer. They believe their study shows that there is an increase in the death rate from lung cancer as the amount of tobacco smoked increases, and is greater (three times) in cigarette smokers than in the users of pipes. In general, the death rate of lung cancer among smokers is forty times greater than that of nonsmokers. The incidence of lung cancer among doctors living in urban areas was twice that among country physicians. However, other studies show a tendency for more nonsmokers and fewer heavy smokers to be found in large urban communities. No consideration was given to the possible factor of smoke from automobile exhausts. This study did not seem to agree with ideas primarily formulated, that there must be a fundamental susceptibility to the occurrence of cancer in a smoker and that smoking merely determines that the primary site of the growth shall be in the lungs. If this were true, there should be a decrease in the incidence in smokers of cancer of sites other than the lung. This is not true.

The mortality from coronary thrombosis indicated a suggestive relationship to smoking in the 35 to 54 year age group.

There was an increase in the mortality among smokers as related to the occurrence of chronic bronchitis, peptic ulcer and pulmonary tuberculosis. Doll and Hill's report suggests a reward for those who stop smoking. They demonstrate a statistically significant reduction in mortality with the increase in the length of time over which smoking has been given up. Mortality among the continuing smokers was three times as great as that among men who had stopped smoking for ten years or more, and

76 per cent greater than the rate for men who had given up the habit within the previous ten years. This, they feel, is very significant since those who have recently given up smoking are apt to have done so for reasons of ill health, and consequently this group should have an higher than average mortality rate in the ensuing years.

The relationship of smoking holds primarily for epidermoid and anaplastic cancers, and to a less marked degree, if it applies at all, to adenocarcinoma. In this study only 3 of the 82 cases of carcinoma were adenocarcinoma.

Among the 106 female doctors who died, three had malignancy of the lung. All three were heavy smokers. From this group no conclusions were drawn.

The authors conclude that there is, (1) a higher mortality among smokers than in nonsmokers; (2) a higher mortality in heavy smokers than in light smokers; (3) a higher mortality in cigarette smokers than in pipe smokers; and (4) a higher mortality in those who continue to smoke than those who give it up.

This survey is of interest. However, for those in this country who continue to use the weed, some consolation can be derived from the fact that this analysis is based on a group of doctors who use English cigarettes and pipe tobacco.

Not only may cancer possibly be a pulmonary complication of smoking, but evidence exists² that chronic bronchitis, edematous fibroma of vocal cords, and chronic obstructive emphysema may very likely be a consequence of long continued smoking.

It has been suggested that smoking results in the drawing into the lungs of polluted air in high concentration. The minute size of the solid material in cigarette smoke encourages its penetration into the smallest airways. In contrast coarser particles from chimney soot, grains and ordinary dusts settle out in the larger bronchi and cause less trouble.

It is true that bronchitis and emphysema are not as dramatic complications of smoking

as is cancer of the lung. Emphysema is certainly much more common and, when fully developed, the resultant pulmonary insufficiency has a prognosis and disability equally as devastating.

Although the cigarette manufacturers report some success in removing part of the nicotine and tar (20 to 40 per cent) by the use of filter tips,³ the method is not completely effective or satisfactory. Actually the introduction of filter tips is in a way an admission of the undesirable side effects existent in the average cigarette.

In view of the above surveys and the many reports issued in this country suggesting a causal relationship between smoking and pulmonary complications, bronchitis, emphysema and cancer, plus the experimental work which seems to fit into this picture, one can conclude that, although the evidence may not be completely definite, to borrow a phrase, "where there is smoke there is fire."

A. W.

³Report Chemical Laboratory A.M.A.: A Study of Cigarettes, Cigarette Smoke and Filters, J.A.M.A. 157:1309, 1955.

ORGANIZED MEDICINE TO PUSH POLIO VACCINATION

It is now two years since the Salk polio vaccine was made available for vaccination on a large scale. In these two years 45 million children and expectant mothers, the most susceptible to the disease, have been vaccinated. Over half of these have had two injections and some are on the way to the third. If all these injections are completed about 90 per cent of the children will be protected.

The carefully tabulated results seem to indicate that the Salk vaccine offers a high degree of protection against paralytic poliomyelitis. During 1956 the disease struck 16,000 persons (half the number of those in 1955), and the fact that the paralytic form is more frequent among the unvaccinated than the vaccinated was clearly demonstrated. Furthermore, it has been proven by now that the vaccine may be given with safety.

The production of vaccine is constant, and sufficient amounts are being supplied to protect the next great susceptible group,

²Lowell, F. C., Franklin, W., Michelson, A. L., and Schiller, I. W.: Chronic Obstructive Pulmonary Emphysema; a Disease of Smokers, *Ann. Int. Med.* 45:268, 1956.

those from childhood to age 40 years. It is estimated that some 108 million persons fall into the age group of 0 to 39 years. As was indicated less than half of these have been vaccinated and only about 5 million of those between 20 and 39 years of age. The use of the vaccine unfortunately is decreasing.

Because of the apathy on the part of the 20 to 40 year old group, so many of whom are parents and wage-earners and whose incapacity is so devastating when it occurs, an effort is being made to stimulate more interest in vaccination.

The Board of Trustees of the American Medical Association adopted a resolution on December 14, 1956, saying, "The A.M.A. is in favor of encouraging the administration of poliomyelitis vaccine to the public, and is in sympathy with the efforts of those who are endeavoring to educate the public in its use. The A.M.A. will lend its efforts through regular medical channels toward the encouragement of such use by the general public." It was then agreed that representatives of the constituent state medical societies should be called in conference on January 26, 1957. This meeting was held for the presentation of the matter to the State Associations and instruction relative to the program.

A meeting was called by President Robert Wood, for February 10, in Nashville, with invitations to public service representatives and officers of the county medical societies to hear the report of the Tennessee representative, Dr. Smeltzer of Knoxville, to the A.M.A. meeting. After discussion it was resolved that the principles embodied in the report from the A.M.A. be adopted and "that the planning and implementation of the program in Tennessee be worked out on a county level," and "that all haste be urged in putting this program into effect."

Since this program of urging the population of the State to take advantage of this great step in preventive medicine represents public service at its best, the President placed this program in the hands of the Public Service Committee.

However, it can not stop here. TV, radio and the newspaper will soon give publicity to this vaccination drive. The implementation of this program of organized medicine must rest in the hands of the committees

and officers of the county societies. It will be a chore, but an humanitarian one.

R. H. K.

DEATHS

Dr. Carl S. McMurray, 60, Nashville, died January 18th at St. Thomas Hospital. His death was due to heart failure. Dr. McMurray was active in medical affairs on the local, state and national levels. He served the Red Cross as well as many other medical and civic organizations.

Dr. James A. Scott, 78, Murfreesboro, died December 13th in Rutherford Hospital as the result of a heart ailment.

Dr. E. Marlin Fitts, 52, Chattanooga, died December 24th in a Chattanooga hospital.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Knoxville Academy of Medicine

The Society conducted its regular meeting on January 8 in the Academy of Medicine building. An election was held for six alternate delegates to the TSMA meeting to be held in April. An interesting case report was given by Victor H. Klein, Jr., M.D. Dr. John Burkhart, Chairman of the Public Committee, was in charge of the program.

Chattanooga-Hamilton County Medical Society

The Society met on January 9 at the Chattanooga Golf and Country Club for the annual banquet and installation of officers. Dr. Gene Kistler assumed office as President, Dr. Moore J. Smith is the President-elect, Dr. Harry A. Stone is Secretary-Treasurer. Lt. Col. J. M. McAshan, Knoxville, a retired air force officer, was the special speaker. He discussed "Unidentified Flying Objects."

Hamblen County Medical Society

At a dinner meeting at the Little Dutch Cafeteria on December 4th, the Hamblen County Medical Society named the following officers for the new year. Dr. James W. Richardson, President; Dr. Powell Trusler, Vice-President; and Dr. C. F. Mynatt, Secretary-Treasurer. Dr. Dale Allen was named

delegate to the TSMA House of Delegates and Dr. D. J. Zimmermann, Chairman of the Program Committee.

Nashville Academy of Medicine and Davidson County Medical Society

The new officers were installed at a dinner meeting at the Hermitage Hotel on January 8. Dr. William O. Vaughn assumed office as President and gave the presidential address. Dr. W. G. Kennon is President-elect, and Dr. Thomas S. Weaver continues as Secretary-Treasurer. Drs. Laurence Grossman and Addison Scoville were installed for three year terms on the Board of Directors. A number of guests attended the installation dinner.

Roane County Medical Society

The Society met on January 29th in the Oak Ridge Hospital. Dr. Amos Christie, professor of pediatrics, Vanderbilt University School of Medicine, spoke on "Some Interesting Pediatric Diagnostic Problems."

Dyer, Lake, Crockett County Medical Society

The Society met on December 12th at Reelfoot Lake. Dr. T. V. Banks of Dyersburg was elected president for 1957. Dr. W. T. Rainey of Tiptonville and Dr. William L. Phillips of Newbern were named Vice-Presidents and Dr. J. T. Fuller of Newbern, Secretary and Treasurer. Dr. W. I. Thornton, Dyersburg, was elected delegate to the State convention. A resolution was adopted relative to the recent death of Dr. John E. Carne.

Cocke County Medical Society

At the December meeting, Dr. Fred M. Valentine, Jr., was elected President, and Dr. W. B. Robinson, Secretary.

Robertson County Medical Society

The Society met December 17th in the Jesse Jones Hospital. The guest speaker was Dr. Edward Martin of Nashville. Dr. Robert C. Webster of Cross Plains and Dr. John B. Turner, Springfield, were welcomed into the society.

Warren County Medical Society

The Society held its December meeting in Clara's Restaurant. Dr. J. P. Dietrich was

named President for 1957. Dr. J. E. Phillips, McMinnville, was elected Vice-President and Dr. Mary E. Thompson, Secretary. Dr. B. C. Smoot was appointed as a three year member of the Grievance Committee, the other members being Dr. Ralph B. Moore and Dr. John T. Mason. The guest speaker for the meeting was Dr. J. L. Farringer of Nashville.

Coffee County Medical Society

The Society met on December 12th at Minor's at which Dr. and Mrs. Claude Snoddy were hosts to the Society. Dr. Clarence Farrar of Manchester was elected President, Dr. Edwin Gray, Vice-President, and Dr. Winfred Wiser, Secretary-Treasurer.

Henry County Medical Society

The Society, January 8th, unanimously adopted the Constitution and By-Laws for County Societies as prepared by a committee of the society.

Memphis-Shelby County Medical Society

The regular session was held in the auditorium of the Institute of Pathology on November 5th. Dr. Harold Boyd reported on the Community Chest actions to date. The scientific program was dispensed with due to the lateness of the hour. Fifty members were present.

The officers for 1957 are: Dr. John D. Hughes, President-Elect, Dr. Harold B. Boyd, President, Dr. Battle Malone, II, Vice-President, Dr. E. D. Mitchell, Jr., Secretary, and Dr. William Black, Treasurer.

NATIONAL NEWS

The Month in Washington

The broad issue of federal construction grants for medical schools pending before the 85th Congress raises again a major question: To what extent is there a physician shortage in the United States?

The administration, through Secretary Folsom, maintains that the need for more doctors and research scientists is increasing rapidly as the population rises, as medical science grows more complex and as research programs are greatly ex-

panded. And, he adds, the need undoubtedly will continue to increase in the years ahead.

Many of these schools already are in a critical financial plight, Mr. Folsom argues, and they need increased private and public funds "just to meet regular operating expenses." Under these circumstances, without further aid, "many schools face almost impossible obstacles in raising funds for construction of new classrooms, laboratories and other facilities." The Secretary then sounds this warning:

"Unless effective action is taken now toward providing these facilities, the shortage of medical scientists will grow much more acute in the years ahead, and the health of the American People will be retarded."

To solve this problem, the administration wants to broaden the program enacted last year for \$30 million a year for three years to help build and equip laboratories doing research in various diseases. It asked the last Congress for \$50 million a year for five years for both research laboratories and teaching facilities. The legislators only granted the \$30 million a year part. That, says the administration, is not enough.

And to bolster that contention, Mr. Folsom cites the record on the laboratory facilities act,—within three months after authorization, requests totaling well over \$100 million were received by the Public Health Service.

But when the committees of Congress, in all likelihood starting with the House Interstate and Foreign Commerce group, launch their hearings, members will want to know just how short the country is of doctors and whether reports of shortages take into account the increased productivity of each physician in the light of new techniques and other medical advances.

★

On the opening day of the 85th Congress, health legislation emerged as a popular subject. Of the approximately 2,000 bills, resolutions and private measures introduced that day, 70 were marked for study by the Washington Office of the American Medical Association. Experience has shown that about 3 per cent of all measures are of medical importance.

Many of the bills were duplicates of those in the last Congress, while others were revised versions of old favorites. In the latter category were the Jenkins-Keogh bills (again bearing the numbers H.R. 9 and H.R. 10) which would provide tax deferment on money paid in annuity plans, and the Bricker Amendment for keeping international treaties from affecting internal laws of the U. S.

The tax deferment proposal was changed in several respects, the most important being a provision for withdrawal of money from plans in advance of age 65, upon payment of a tax penalty. The key section in the proposed constitutional amendment sponsored by the Ohio Senator states that "A provision of a treaty or other international agreement not made in pursuance of this Constitution shall have no force or effect."

One of the few surprises in the opening day rush to the bill hoppers was a bill Rep. Poage (D. Tex.) to authorize the Secretary of HEW to make long-term, 3%-interest loans to nonprofit hospitals for construction and expansion of facilities, including nurses homes. Certain sectarian groups have been pressing for just such a plan in lieu of taking federal grant money under the Hill-Burton program.

Jenkins-Keogh Bill Status

Indications are that the much delayed Jenkins-Keogh Bill, providing for deferment of tax liability on income paid into a restricted retirement fund will be pushed again in the next session of Congress, with the American Bar Association and A.M.A. support. However a reduction in the amount of exemption is likely. Those in a position to know say that if the measure is not enacted, physicians may face increased pressure for Social Security coverage of the medical profession.

The newly elected House members of the 85th Congress, all 435 of them, have been polled on the principles of the Jenkins-Keogh bills for tax deferment on money paid into annuity plans. A total of 294 members favor the plan, only three were opposed, eighteen are noncommittal, and 120 did not reply to the question.

The American Medical Association has supported Jenkins-Keogh type bills since 1948 in the belief that the self-employed are now discriminated against. Tax laws permit employers to set aside limited sums of money for their employees on a deferred tax basis but this is denied the self-employed.

MEDICAL NEWS IN TENNESSEE

Pathologists Conduct Regional Parley

A joint meeting of the southeastern and south central regions of the College of American Pathologists was held in the Institute of Pathology in Memphis, January 18-20. Hosts to the meeting were the Memphis Society of Pathologists and the Tennessee Association of Pathologists. Approximately 100 doctors were in attendance. Among visiting physicians participating in the program were: Dr. Margaret Smith, associate professor of pathology, Washington University, St. Louis who spoke on "Salivary Gland Virus Infections" and Dr. J. F. A. McManus, professor of pathology, University of Alabama College of Medicine. Dr. George Lamb, professor of pathology at the University of Tennessee College of Medicine also spoke on opening day. Speak-

ers on January 19th were Dr. Israel Davidson, professor and chairman of the Department of Pathology, Chicago Medical School; Dr. L. W. Diggs, professor of medicine and director of the Department of Medical Laboratories at U-T; and Dr. Warren Bell, associate professor of medicine and director of Medical Laboratories at the University of Mississippi College of Medicine. A clinical workshop was conducted on January 20. Dr. Albert M. Hand, president of the Memphis Society of Pathologists, was chairman of the arrangements committee.

University of Tennessee College of Medicine

Four members of the staff of the division of obstetrics and gynecology have been promoted: Drs. H. E. Atherton and Harold Feinstein, from instructor to assistant professor, Drs. R. M. Ruch and A. E. Laughlin, from assistant to instructor.

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Dr. Nicholas R. DiLuzio has been awarded by The National Academy of Sciences a grant of \$4,000, and from the Atomic Energy Commission a grant of \$6,048 to support studies on the reticuloendothelial system.

Dr. Jesse D. Perkinson, Jr., has been awarded a \$5,940 research grant by the Atomic Energy Commission and a \$3,700 grant by the American Cancer Society for a study of internal radiation.

Dr. H. H. Wilcox has been awarded a \$3,000 contract with the U. S. Public Health Service for the study of the aging process in brain of guinea pigs.

Drs. J. P. Quigley, H. Louckes and D. A. Ross received a grant of \$8,474 from the U. S. Public Health Service, to continue studies on the basic mechanism of gastric evacuation tract, the accurate measurement of gastrointestinal pressures and related items.

Dr. Donald B. Zilversmit has been awarded a grant of \$7,040 from the Life Insurance Medical Research Fund to continue studies of the disturbances of fat metabolism in arteries of animals which have been made arteriosclerotic, and a \$9,441 grant from the U.S.P.H.S. for an extension of studies to other animals not susceptible to the disease.

Dr. E. H. Storer has been awarded a \$2,800 grant by Abbott Laboratories to evaluate the clinical applications of intravenous fat emulsion and a \$7,400 grant from the U. S. Public Health Service to support the study of gastric secretory physiology.

A grant of \$9,720 has been awarded to establish a special training program in the field for rheumatology. The award was made by the U. S. Public Health Service to the Division of Medicine.

Vanderbilt University

A Cardiac Work Evaluation Clinic has been established at Vanderbilt University Hospital under the auspices of the Middle Tennessee Heart Association. The facilities of this clinic are available to the cardiac patients of the middle Tennessee area. The clinic is held each Wednesday afternoon, under the direction of Dr. Fred Goldner, Jr. Also in attendance are a medical social service worker and a vocational rehabilitation specialist. The study conducted on each patient includes medical evaluation, social service investigation and vocational rehabilitation guidance.

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Vanderbilt Medical School will use a \$173,548 grant principally for modernization and rehabilitation of its metabolic research floor. The announcement has been made by the Dean, Dr. John B. Youmans. The grant was made available by the U. S. Public Health Service. This is one of 73 grants awarded by the service for additional health research facilities. Funds will also be used for a volatile solvent vault and a Marinelli shielded room for research.

Heart Association

On January 24th, a symposium was held under the auspices of the Chattanooga Area Heart Association. Guest speakers were: Dr. Harry Ungerleider, director of medical research, Equitable Life Insurance Society, New York, who spoke on "Recent Advances in Cardiovascular Diseases"; Dr. Eugene Stead, professor of medicine, Duke University, Durham, who spoke on "Pathologic Physiology of Congestive Heart Failure"; and Dr. Irvin Page, Cleveland Area Heart Society, Cleveland, Ohio, who was the banquet speaker.

John Sevier Chapter AAGP

Dr. Robert J. Allen, Elizabethton, has been elected president at a dinner meeting held in Erwin in December. Dr. John E. Manal, Kingsport, was elected Vice-President, and Dr. B. W. Frizzell of Johnson City was re-elected Secretary-Treasurer.

West Tennessee Cooperative Health Program

Through a cooperative effort by the University of Tennessee and the Tennessee Department of Public Health, implemented by a \$50,000 grant from the U. S. Public Health Department, a group of hospitals in the western part of the State hope to develop a postgraduate and consultant service to function in their respective communities. Though details either are not available or have not been worked out at this time, it appears that a part-time radiologist, pathologist, cardiologist and medical records librarian will be available for visits to the several hospitals. A part-time medical director, a full-time secretary and a full-time nurse consultant complete the staff. The following hospitals have expressed interest in this development: Armstrong Clinic, Milan Hospital, St. Mary's Hospital, Brint Hospital, Haywood County Memorial Hospital, Henry County Hospital and the Jackson-Madison County General Hospital,—including a total of 440 beds.

The purposes of this Program are to offer to these hospitals the services of competent specialists who may inspect the special services offered by the hospitals, advise as to equipment and procedures, aid in the training of technical personnel, set-up the special services and continue to supervise their performance.

Memphis A.G.P.

At its meeting on November 20, the program consisted of a Panel Forum on "The Future of the General Practitioner in the Hospital." The principal speakers were Dr. Jack DeTar, President of the A.A.G.P., and Dr. Kenneth Babcock, Director, Joint Committee for Hospital Accreditation.

The panel consisted of representatives of the various hospitals of Memphis and the Memphis A.G.P. was ably represented by Drs. Arthur Green and Ben Pentecost. Dr.

Wilson Searight was Program Moderator.

At its meeting of December 11, Dr. James Holmes clarified the processes necessary for the establishment of Departments of General Practice in hospitals. The following officers were named for 1957: Dr. James Collins, Memphis, President; Dr. John Carter, Germantown, President-elect; Dr. Eugene Gadberry, Vice-President; and Dr. George H. Bassett, Memphis, Sec.-Treas.

Metabolic Insufficiency, a film by Smith, Kline and French, was shown.

PERSONAL NEWS

Dr. Bruce H. Sisler, Gatlinburg, has been elected Governor of the 237th District of Rotary International, Worldwide Service Club Organization.

Dr. Edward P. Cutter, Clarksville, was elected President of the Clarksville Memorial Hospital Medical Staff, **Dr. Paul Wilson**, Vice-President, and **Dr. Chas. A. Trahern**, Secretary.

Dr. J. Donald Hawthorne, Kingsport, has been named health director for Washington County.

Dr. Hoyt C. Harris, Lewisburg, has announced his association with Gordon's Hospital in Lewisburg.

Dr. Henry Herron, Jackson, is the new chief of staff at Jackson-Madison General Hospital. Others elected to the staff include **Dr. George D. Dodson**, assistant chief of staff; **Dr. Hughes Chandler**, chief of surgery; **Dr. Breck Wyatt**, chief of medical service; **Dr. Swan Burrus, Jr.**, chief of obstetrical service; **Dr. Allen Williams**, general practice; **Dr. Paul Wylie**, radiology; and **Dr. Chester Jones**, pathology. All are from Jackson.

Dr. Frank S. Rose, Chattanooga, has been named deputy coroner for Hamilton County.

Dr. Doyle E. Currey, Chattanooga, was recently elected coroner.

Dr. Wade Boswell, Chattanooga, spoke before the Woman's Auxiliary to the Knoxville Academy of Medicine. His subject was "The Mental Health of Geriatrics."

Dr. Robert E. Merrill, formerly of Chattanooga, has been named director of the public health department of Coffee and Franklin Counties.

New officers of the Bradley County Memorial Hospital are **Drs. Claude Taylor**, president; **J. C. Lowe**, vice-president; **C. H. Kimball**, secretary; **Claude Taylor**, chairman of the executive committee with other members being **Drs. C. H. Kimball**, **Gilbert Varnell**, **M. S. Trewitt** and **I. C. Humphries**. Other Bradley County physicians serving the hospital staff are **Dr. Jack R. Free**, **Dr. William A. Garrott**, **Dr. J. C. Lowe**, **Dr. S. J. Sullivan** and **Dr. Joseph McCoin**. Committeemen include **Dr. William I. Profitt**, **Dr. Dwight N. Arnold**,

Dr. Marvin R. Batchelor, Dr. I. C. Humphries, and Dr. M. S. Trewhitt.

Dr. Charles K. Rath, Murfreesboro, has accepted a position with the Veterans Hospital at Beckley, West Virginia.

Dr. James W. Polk, Union City, has been installed as president of the Union City Kiwanis Club.

Dr. H. P. Clemmer, Milan, has been elected president of the Milan Chamber of Commerce.

Dr. M. Lou Hefley, Knoxville, has been elected chief of the Department of Obstetrics and Gynecology at East Tennessee Baptist Hospital. Other officers are **Dr. Leon J. Willien**, chief of staff; **Dr. S. J. Platt**, vice-chief; **Dr. Margaret Joyce**, executive committeeman; **Dr. W. H. Gardner**, credentials committee; **Dr. R. H. Duncan**, chief of general practice department; **Dr. M. Frank Turney**, chief of the surgery department and **Dr. Ralph Nichols**, chief of the medical department. All are from Knoxville.

Dr. Daugh W. Smith, Nashville, is the new president of the Board of Trustees of Harpeth Hall Girls School.

Dr. C. N. Hickman, Bells, has been elected a first vice-president of the Consolidated Medical Assembly.

Dr. Albert J. Grobmyer, Jr., Memphis, has been elected chief of the medical staff of St. Joseph Hospital.

Dr. Robert F. Patterson, Jr., Knoxville, announces the moving of his office from the Medical Arts Building to the Blount Professional Building.

Dr. B. M. Overholt, Knoxville, has been elected chief of staff of St. Mary's Hospital, **Dr. John Hall** was chosen as vice-chief of staff and **Dr. Bruce Campbell**, secretary.

Dr. C. H. Barnwell, Chattanooga, has re-opened his office in the Medical Arts Building.

BOOK REVIEW

Care of the Long-Term Patient. Vol. II of Chronic Illness in the United States, under the auspices of Commission on Chronic Illness. 587 pages. Cambridge, Massachusetts: Harvard University Press for the Commonwealth Fund. 1956. Price \$8.50.

Although this is Volume II of four volumes planned on chronic illness, it is the first to be published. The others will be on *Prevention of Chronic Illness*, *Chronic Illness in a Rural Area*, and *Chronic Illness in a Large City*. Together, they will provide the most comprehensive coverage of the subject in this country today, and will bring to fruition the seven years of labor of the Commission on Chronic Illness.

Volume II takes as its chief text the 80 conclusions and recommendations of the National Conference on the Care of the Long-Term Patient. These are organized under several headings, and a chapter is devoted to each. The material covers not only the needs of the chronically ill in institutions, but in their homes as well. Rehabilitation is discussed quite thoroughly, and its applicability to home care is stressed. The qualifications and training of personnel, the coordination and integration of all facilities engaged in the care of the chronically ill, financing of costs, and research in both the medical and administrative aspects of the program are dealt with comprehensively. The appendix of more than 100 pages contains a considerable amount of statistical data concerning various attributes of the chronically ill, details of planning a chronic illness facility, and a suggested curriculum for the training of nursing personnel.

This is a volume that should prove invaluable to all who are engaged in the care of the long-term patient. It presents not only a philosophy, but also a detailed account of the medical and administrative needs of the chronically ill. With the decline in the importance of the acute diseases, and with the aging of our population, the chronic diseases and their problems become increasingly prominent. This is a timely book, and its companion volumes will be awaited eagerly by all who are in daily contact with the difficult problems of medical care of the chronically ill.

LOUIS D. ZEIDBERG, M.D.

ANNOUNCEMENTS

Gill Memorial Eye, Ear and Throat Hospital Annual Spring Congress

This organization will conduct its 30th annual spring Congress in ophthalmology and otolaryngology and allied specialties from April 1 to 6, 1957, in Roanoke, Virginia. An outstanding program with nationally known essayists has been obtained.

Venereal Disease Postgraduate Conference to Be Held at Memphis

The 26th annual venereal disease postgraduate conference will be held in Memphis at the University of Tennessee College of Medicine April 18-20, 1957. TSMA is a co-sponsor of this conference with the University of Tennessee. The American Academy of General Practice has approved this course for twenty units of Category I credit for members of its Association. TSMA is cooperating with the University of Tennessee College of Medicine and the Department of Health, Education and Welfare in the promotion of the conference.

Doctor-Lawyer Meeting Scheduled for Atlanta

The A.M.A. invited doctors and lawyers in the South and Southeast to a medicolegal symposium in Atlanta, Ga., March 15 and 16. "Medicine and the law must work together so frequently that we feel open discussions of mutual problems would be of great assistance to the two professions," said C. Joseph Stetler, Director of the

A.M.A. Law Department in announcing the meeting.

Registration fee for the meeting to be held at the Atlanta-Biltmore Hotel is \$5.00, to cover the cost of a luncheon session and a copy of any proceedings that are to be published. Applications for attendance, together with the registration fee, should be sent to the Law Department, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

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THE KNOX COUNTY MEDICAL SOCIETY, 1857-1957: AN ABSTRACT

S. J. PLATT, M.D., and MARY LOUISE OGDEN, B.L.S., Knoxville, Tenn.

The pioneers who settled in this territory, now East Tennessee, brought with them as part of their cultural heritage such knowledge and superstitions regarding disease and its treatment as were currently accepted among Americans of that period. For some years there were no regular physicians on the frontier. The occupations in the primitive frontier communities were so unspecialized that the practice of "physick"—so called—was only one of several occupations in which a pioneer physician might be engaged.

Dr. Samuel Carrick, for example, is the first physician of whom there is record in Knox County. He settled near Knoxville about 1789, and was the first pastor of the Lebanon-in-the-Fork Presbyterian Church. Dr. Carrick not only preached the Presbyterian gospel, practiced medicine, but also taught every subject in the curriculum of a private school, and later, in 1794 became president of Blount College, now the University of Tennessee.

Dr. James Cozby, a bold and fearless surgeon, settled near Kimberlin Heights some time prior to 1788. He was regimental surgeon under General John Sevier at the battle of King's Mountain, an intrepid Indian fighter, farmer, ruling elder in the Lebanon-in-the-Fork Presbyterian Church, and prominent in the political life of Knoxville. Ramsey illustrates the crude though often successful methods of early surgical practice by the following case report: "The boldness of Dr. Cozby's surgery is reported in the case of the American soldier shot by an Indian lurking in ambush along the trail. He was wounded in the abdomen. The ball had reached the abdominal cavity without probably touching any of the vitals of the viscera. He stuck to his horse and reached the station before he fell to the ground. He was bleeding profusely and ready to faint. Dr. Cozby was sent for and brought

to him promptly. The ball could not be found, it had probably lodged in the cavity of the abdomen, a coagulation had formed, and was supposed to be bleeding inwardly. Dr. Cozby called for some warm water and diluting some fresh sweet milk with it poured the mixture through a funnel inserted in the wound into the cavity. With the aid of assistants standing around, the wounded body was carefully taken up and well shaken and tossed around. The coagulation was dissolved and liquified by this treatment. The patient was turned face downward, the fluids escaped, and the soldier recovered."

Many of the settlers were dependent upon their own ministrations when they became ill, and exchanged remedies much as women exchange recipes. A valuable household guide found in many early homes was John C. Gunn's "Domestic Medicine," published in Knoxville in 1830.

At the beginning of the 19th century other physicians of great versatility settled in Knoxville, and these few educated physicians in the community played important roles in all phases of its life. Among the early outstanding practitioners in Knox County were Drs. J. C. Strong, J. G. M. Ramsey, noted historian and financier, Frank A. Ramsey, editor, author, and educator, James King, Donald McIntosh, R. O. Currey, editor and author, with varied interests other than medicine, William J. Baker, and B. B. Lenoir, active in medical organization.

There were only three medical schools in the entire country in these early days and the men who received the M.D. degree constituted a small minority of the medical profession of Tennessee. The 1,500 mile round trip on horseback from Knoxville to the nearest medical center, Philadelphia, did not appeal to any but the more serious minded student of medicine since one could

practice medicine after a short period of study under a practicing physician. It was within this small group of educated physicians throughout the state that there developed a movement for the organization of a state medical society, with the hope of remedying this uncontrolled practice of medicine, and to curb the growing number of unqualified practitioners. There were five charter members of the state society from Knox County at the organizational meeting in 1830. They were Drs. J. G. M. Ramsey, Donald McIntosh, James King, William J. Baker, and Joseph C. Strong. Dr. King acted as chairman until the organization was completed.

As the number of physicians increased and travel to the state meetings in Nashville was tedious, it became necessary to organize sectional societies patterned after, and closely affiliated with the state society. On May 7, 1845, twelve men from six counties met in Knoxville and organized the East Tennessee Medical Society which flourished until 1941. The Civil War temporarily disrupted this society as it did the later organization, the Knox County Medical Society, but they were both reorganized after the war. Knox County always provided its share of active members and officers for the East Tennessee Medical Society, and among its first officers from Knox County were Dr. Frank A. Ramsey, corresponding secretary, Dr. James Rodgers, recording secretary, and Dr. William Rodgers, treasurer. Dr. J. G. M. Ramsey and Dr. S. B. Cunningham, Washington County, drafted the constitution and by-laws.

The meetings of the East Tennessee Medical Society served as a stimulus to its members whose writings appeared in several of the medical journals. Until 1847 there were no medical journals published in the state, and papers had to be sent to outside medical centers for publication. The decade of the fifties produced a number of medical journals in Tennessee but they were short lived. In 1852, the East Tennessee Record of Medicine and Surgery became the official organ of the East Tennessee Medical Society. It was published in Knoxville under the auspices of the society, with Dr. Frank A. Ramsey as editor. It was issued

quarterly, April and July 1852, and January and May 1853, when it ceased for lack of support. In 1856, the Southern Journal of the Medical and Physical Sciences became the official organ of the East Tennessee Medical Society. It had a checkered career. First published in Nashville, it was later moved to Knoxville. Among the editors were Dr. Frank A. Ramsey and Dr. R. O. Currey. It was in this journal that Dr. John M. Boyd reported the third but, it is claimed, the first successful hysterectomy in medical records. The operation was performed on November 1, 1856, by Dr. William J. Baker, Dr. James H. Sawyer, and Dr. John M. Boyd. The patient lived for 34 years.

The first two medical books published in Tennessee were by Knoxville physicians. They were "Domestic Medicine," by John C. Gunn, and "The Practical Monitor," by T. A. Anderson.

May 5, 1847, the newly organized American Medical Association recommended that primary medical schools be established. Dr. Frank A. Ramsey organized one in Knoxville in 1852. Its purpose was to direct the studies of young men who intended to practice medicine. It was to be staffed by physicians amply qualified; however, it did not succeed for long. In 1889, a group of Knoxville physicians incorporated the Tennessee Medical College. This college flourished for a while but in 1905 it was sold to Lincoln Memorial University and was continued as the Medical Department of Lincoln Memorial University. It was absorbed by the University of Tennessee College of Medicine in 1914. Many of Knoxville's finest physicians taught in this school and many others were graduated there.

The American Medical Association in 1857 urged the immediate organization of county medical societies in order that delegates might be appointed to attend the 10th annual session of the American Medical Association in Nashville, May 5, 1857. As a result of this request, the Knox County Medical Society was duly organized on March 20, 1857, in the court house in Knoxville. Dr. Otis F. Hill was elected president, and Dr. John M. Boyd, secretary and treasurer. The charter members were Drs. Hill, Boyd, R. O. Currey, James Rodgers, and Orren

Smith. There were about 28 practicing physicians in Knox County at this time, many of whom joined the society later. The minutes of the weekly meetings of the Knox County Medical Society from 1857 until 1906 were destroyed by fire in 1906, and the activities of the group during this period have been gleaned from various sources.

The Civil War soon disrupted this newly organized county society. Many of the members served in the armed forces and others left town for political reasons. It was not until 1871 that it was revived and re-organized as the Knox County Branch of the newly re-organized East Tennessee Medical Society. Dr. A. B. Tadlock was the new president. The organizers were Dr. Frank A. Ramsey, who declined the presidency, Drs. Swan M. Burnett, A. B. Tadlock, and Chalmers Deaderick. Other members were soon added and the society continued to function as a branch of the East Tennessee Medical Society until 1884. In that year it re-organized under the authority of the Tennessee State Medical Association and became the official chartered society of Knox County, and had both scientific and legislative functions.

The society met weekly, at first in the offices of different members and later, as its numbers increased, it rented suitable quarters. In 1876 Dr. Chalmers Deaderick was treasurer, and one of his record books of that year names 28 senior members and five junior members. Dues for senior members were fifty cents a month, and for junior members, twenty-five cents. The initiation fee was one dollar. The expenditures of the society for 1876 were as follows: stationary and postage, \$1.50, blank book, 45 cents, janitor, Uncle Jack, 50 cents a month, rent, lamp oil and lamp shade, \$10.45, ice, 15 cents. This year ended with a cash balance of \$1.45 in the treasury. The next year saw a balance of 20 cents in the treasury, but during the year the society had to ask for loans of \$2.50 each from eight members to meet its indebtedness.

In 1896, there was an organization formed from society members known as the Knoxville Academy of Medicine. Its purpose was scientific and fraternal, since so much time at the regular meetings of the Knox County Medical Society was consumed in consider-

ing matters of ethics there was not sufficient time for scientific papers. The programs of the Academy meetings were so elaborate that the members "soon wore themselves out" and the organization ceased to function during the latter part of the second year of its existence.

The latter part of the 19th century saw rapid developments in science, medicine and surgery. Knoxville physicians were at first rather conservative about accepting the germ theory of disease and antiseptics in surgery, and heated discussions resulted. But once having accepted these modern theories the members were not slow in making contributions themselves to the developments in medicine and surgery. Dr. J. M. Kennedy was one of the pioneers in new treatments. His daughter was dying with diphtheria, having tried all of the accepted treatments to no avail, in desperation he gave her an injection of the new diphtheria antitoxin. She immediately began to improve and is living today. He was the first physician in Knoxville to use the antitoxin with success. The Ristine Operation, a secondary operation on the perineum, was the result of long study by Dr. C. E. Ristine of a patient whose condition failed to respond to the operations currently used. His operation proved successful and was included in the textbooks of several languages. Today the members of the Academy are advancing with success into the field of heart and blood vessel surgery.

The struggle to have qualified physicians licensed by the state was still continuing with little success during the 1880's. The first legislation suggested for this purpose was proposed in 1817 but nothing had ever been accomplished. Dr. A. B. Tadlock, president of the state association in 1883, in his presidential address in 1884 very forcibly brought up the question of legislation to settle this problem in his address "To Medical Men Belong Medical Matters." Dr. S. R. Miller later served on the state committee which finally succeeded in having an act passed in the legislature, in 1889, providing for the licensing of all physicians by the state.

In the 1870's the public health movement in Tennessee became one of increasing interest, "germs of disease," sanitation,

hygiene, and preventive medicine were terms that began to be used commonly. Tennessee had been ravaged repeatedly by destructive epidemics since cholera had first appeared in 1833. It made periodic returns, as did yellow fever, small-pox, malaria, and other epidemic diseases. As early as 1855, the county recorder, S. A. White, had sent a notice to every physician in Knox County regarding the establishment of a Board of Health for the City of Knoxville. Immediately Drs. James Rodgers, B. Frazier, W. J. Baker, C. W. Crozier, R. O. Currey, J. J. Moorman, G. J. Jackson, and O. F. Hill held a meeting with Dr. Baker, chairman, and Dr. Currey, secretary. They appointed a committee to draw up sanitary regulations, and rules and regulations for the government of the Board of Health which were submitted to the Municipal Board. At a later meeting of the Board of Health it was also determined to attempt the establishment of a general hospital. The results of the recommendations of this committee were a general cleaning up of the entire city. The erection of a hospital was begun with voluntary funds solicited from the citizens. The Civil War intervened and the partially built hospital was destroyed. The stones in the foundation were used by the troops to build fireplaces and the lumber was used for firewood.

The Civil War disrupted local government and it was not until 1873 that anything constructive was attempted again. Early that year Mayor Rule had built a house outside of the city to be used as a small-pox hospital, and ordered the removal thereto of all persons affected with the disease. He appointed Dr. Swan M. Burnett to take charge of the hospital. In December, 1883, the city rented the upstairs rooms of a small building on the corner of Depot Avenue and Broadway for use as a city hospital. It had eight beds and was used as an experiment to see if the city needed a hospital. In a year larger quarters had to be found and the hospital was moved into the old residence of Dr. J. C. Strong on the corner of Cumberland and State Streets. A few years later a movement was started among the women of the city to provide an adequate hospital for the city. By 1902 their efforts were rewarded with the opening of Knox-

ville General Hospital. Some of the members of the medical society gave vigorous support to help the women achieve their goal.

In 1873, Mayor Rule appointed a Board of Health for Knoxville with Dr. F. K. Bailey as Health Officer. In this same year the Mayor sent Dr. A. B. Tadlock to Greeneville, Tennessee, in answer to a plea for help from that small town stricken with cholera. A vivid description of the conditions found there was given before the state association at its annual meeting in 1893 by Dr. Tadlock in a paper entitled "Monkeying with Microbes."

On February 6, 1874, a city ordinance provided for the election of a city physician at an annual salary of \$300, and on the same day the Board of Aldermen elected Dr. A. B. Tadlock to be Knoxville's first city physician. On August 8, 1884, a Board of Health was again established by ordinance to consist of one lawyer, one commercial man, and three physicians, regular graduates of medicine. Among other things, this Board was required to keep an accurate record of the births and deaths. This was not done satisfactorily until the state Vital Statistics Law was enacted in 1913.

After the yellow fever epidemic in 1878, Dr. Frank A. Ramsey delivered, upon request, a public address in Nashville on "Sanitary Medicine," the purpose of which was to secure support for the public health movement. Unfortunately, however, Dr. Ramsey expressed himself as opposed to quarantine and the germ theory of disease. On one occasion, when cholera was present in Knoxville, he posted a notice to this effect: "A disease very much resembling cholera prevails in the city, and I would advise everyone to be very prudent in his manner of living and in his diet." But others more readily accepted the germ theory, among them Dr. H. P. Coile, who gave a paper in 1888 before the state association on "The Germ Theory of Disease."

In 1901, the Knox County Medical Society modernized its constitution and by-laws by a complete revision. In the same year the society applied for and received a charter of corporation. In 1904, the constitution and by-laws were again revised to conform to the state association's complete revision of

its constitution and by-laws in 1902 and 1903. In the early years when the membership was small and enthusiasm lagged some members served as president more than one year. Dr. Chalmers Deaderick served three times in 25 years, Dr. J. M. Kennedy, four times in 26 years, Dr. A. B. Tadlock, three times in 16 years, Dr. C. E. Ristine, twice in 20 years, Dr. M. H. Lee, twice in 33 years, and Dr. John M. Boyd, three times in 10 years. Dr. Jesse C. Hill was secretary of the society continuously from 1917 until 1941 when he became president.

The members of the state society from Knox County did not play a very active role in the affairs of the society until after the Civil War. Dr. James King was the presiding officer during the organizational meeting, May 3-4, 1830, in Nashville, and was chosen to be the first vice-president of the society. Dr. John H. Kain was vice-president for East Tennessee in 1832-1834, but Knox County was not represented on the roster of officers again until 1870-1871 when Dr. M. M. Alexander was elected vice-president from East Tennessee. Dr. Frank A. Ramsey, Dr. S. R. Miller, and Dr. A. B. Tadlock were active in the struggle to obtain legislation in regard to state licensing of physicians. Dr. J. G. M. Ramsey and Dr. F. K. Bailey submitted some material in 1875 for the proposed "Medical Annals of Tennessee" which was never completed. Dr. Chalmers Deaderick and Dr. T. A. Hicks served on the State Board of Medical Examiners in 1889. In 1880 Dr. Mary T. Davis, Knoxville, was the first woman physician to become a member of the state society, and in 1884 the first woman to read a paper before the state society. Dr. Ruth A. French, Knoxville, was the second woman member, joining in 1884. Dr. S. R. Miller served most efficiently on the state medical defense committee during World War I. Thirty-one physicians from Knox County served in the armed forces during this war. Dr. Miller has the enviable record of missing only one state association meetings in 45 years. Dr. E. R. Zemp served as Speaker of the House of Delegates from 1931 through 1950, the longest record of any member to that date. There have been twelve presidents of the State Association from Knox County: Drs. B. B. Lenoir, A. B. Tadlock, S. R. Miller,

B. D. Bosworth, S. M. Miller, L. L. Sheddan, E. R. Zemp, W. P. Wood, T. R. Barry, R. H. Monger, K. C. Copenhaver, and R. B. Wood. There have been nineteen vice-presidents for East Tennessee from Knox County. Besides serving as officers, many of the members have been councillors, trustees, and committee chairmen and members. Since 1880 the State Association has met regularly at stated intervals in Knoxville.

As the public health movement became increasingly stronger in Tennessee we find local governments assuming most of the activities in which the individual members of the Knox County Medical Society had formerly assumed personal responsibility. Dr. J. G. M. Ramsey had been instrumental in establishing the public school system here as well as promoting rail and water transportation systems. Dr. A. B. Tadlock was the president of the first street railway company in Knoxville. Others had been active in obtaining pure water and sewerage facilities, garbage disposal, school health, vital statistics, sanitary inspection of eating places, health examinations of food handlers, establishment of hospitals, and many other phases of preventive medicine. However, they have not relinquished their position as guardians of the public health and welfare entirely, but stand by in an advisory capacity rather than actually carrying out many of the active roles in public health.

From 1902 until 1917, Knoxville General Hospital was the only hospital of consequence in Knoxville except for Lincoln Memorial Hospital which was built by several physicians to be used in connection with the medical school. Knoxville General was opened amid the groans of the taxpayers, some of whom thought it the greatest folly for the city to operate a hospital. There were at various times small private hospitals operating in the city. By 1917 there was a definite need for more hospital beds. As a result Riverside Hospital was incorporated by six members of the medical society as a private hospital of some 40 beds. It was soon followed by Fort Sanders Hospital, built by a group of physicians concerned over the unsanitary conditions in the city hospital. Ten years later Riverside Hospital was merged with Fort Sanders Hospital. In 1930, the Catholic hospital, St.

Mary's, was opened, and in 1948, the East Tennessee Baptist Hospital. Beverly Hills Sanatorium for the treatment of tuberculosis was opened in 1924. It was the result of the life-long efforts of Dr. H. P. Coile in his fight against tuberculosis. Unfortunately, Dr. Coile did not live to see the fruits of his labor as he died just before the hospital was built. In 1950, the East Tennessee Tuberculosis Hospital was opened for the medical and surgical treatment of tuberculous patients. It was the result of the untiring efforts of the medical society to obtain a state hospital in Knox County for tuberculosis. With the advent of atomic energy, several members of the Knoxville Academy of Medicine worked unceasingly to have a research hospital located in Knoxville. It is the ideal location for atomic research because of its proximity to Oak Ridge. The hospital became a reality in 1956 when the University of Tennessee Memorial Research Center and Hospital opened. The opening of this newest hospital marked the closing of the historic old Knoxville General Hospital where so many of Knoxville's physicians had been intimately associated with the hospital and the old Tennessee Medical College.

As the membership of the medical society increased in the 1920's more interest developed within the society to produce a more closely knit organization. In 1926, a lack of knowledge or practice of medical ethics was discerned among the younger members. To remedy this lack, a group of younger members organized a club within the society called the E Club, the E standing for ethics. Its purpose was to study medical ethics and apply them in their practice. This active, earnest group has maintained a strong organization, and the public as well as the medical profession has benefited from their efforts.

The impact of the financial depression of the early 1930's was felt severely by the medical profession. The various relief agencies set up by the federal government to provide work for the unemployed all demanded medical assistance. This work grew to such an extent that measures had to be taken to curtail it. Just after the recovery from the depression years, World War II broke out bringing problems of

shortages of physicians, materials, rationing, civilian defense and many new problems. Sixty-eight members of the Knox County Medical Society served in the armed forces.

In honor of those who served in the armed forces, and as a memorial to the three members who lost their lives, the members who remained at home bought and furnished a permanent home and library for the society. During the first ninety years of its existence the society had led a nomadic life. It had met in members' offices, church parlors, over drug stores, in basements, hotels, the court house, and at the hospitals. This wandering life had not been conducive to close cooperation among the members. Often during the last 30 years feeble efforts had been made to find a suitable place for a permanent home, but nothing had materialized until Dr. Herbert Acuff, president of the society in 1945, put all his efforts behind this project.

With his customary zeal, Dr. Acuff worked tirelessly with his committees in obtaining contributions from the members, investigating pieces of property, and attending to the myriad facets attendant upon such an undertaking. In 1945, the society purchased and renovated the two story brick Reaves-Leach Infirmary building, located within two or three blocks of the offices of approximately two-thirds of the members. This historic landmark had been started, in 1796, by Governor John Sevier for a governor's mansion. He was the first governor of Tennessee. He had to discontinue building for lack of funds and the property was sold to a leading merchant in Knoxville. Its sturdy construction and location admirably suited the needs of the medical society.

The home was formally opened in December, 1945. It was the realization of a dream of the society for many years. This was the crowning achievement of the small society started in 1857 with a handful of farsighted men. The spirit at the dinner held in the new home on the opening night was one of good fellowship, pride in their accomplishment, and a closer unity among the members. This spirit has continued to live and it has been attributed to a certain sense of independence and security which

comes through the common ownership of a home and library.

In the front entrance hall to the Academy is a bronze plaque in memory of the men who served in World War II, and to the three who lost their lives. In the auditorium are other memorials to former members: a beautiful silk taffeta American flag in memory of Dr. J. H. Keeling, two handsome chairs and table for the presiding officers given in memory of Dr. Herbert Acuff, a walnut lectern in memory of Dr. T. R. Barry, and a Connick jewelled stained glass panel over the mantel, depicting "Christ, the Physician," given in memory of Dr. K. C. Copenhaver by his daughter. The early mantel itself is an architectural masterpiece, the restored fireplace is faced in black and gold Belgian marble. The lighting fixtures are exact replicas of the lanterns hung in the old North Church in Boston as a signal to Paul Revere during the Revolutionary War. These six lanterns were given by six members. An oil painting, "The Autopsy," done by Henri Gervex in 1852, was given by three Academy presidents, Drs. E. C. Sienknecht, B. M. Overholt, and J. G. Eblen. (Fig. 1.)

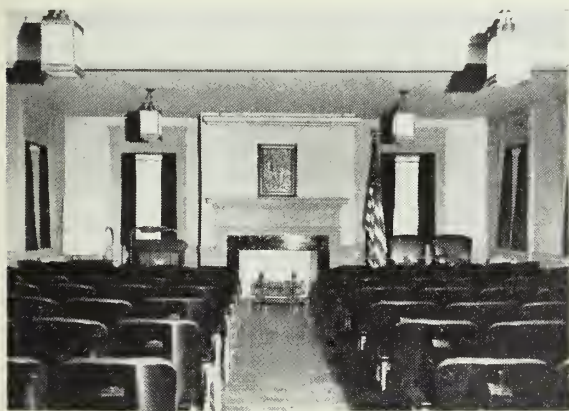


FIG. 1.

In 1946, the name of the Knox County Medical Society was legally changed to the Knoxville Academy of Medicine. In 1953, there was a revision of the constitution and by-laws under the chairmanship of Dr. George L. Inge.

The library of the Academy is the largest private medical library in East Tennessee. A large number of the 7,700 volumes have been contributed by the members. A microfilm reader was presented to the library as a memorial to Dr. W. P. Wood by his many

friends. At various times during the history of the society attempts were made to have a library but having no permanent place to house the material it was soon lost. Many valuable medical records and mementoes have also been lost for the same reason. The pictures of seventy-seven past presidents of the society hang on the walls of the main reading room of the library. (Fig. 2.)



FIG. 2.

In connection with the library there is a museum of old medical instruments, old furniture and old books, that is unique in the state. The museum was started in 1952, as a memorial to the former members of the medical society. After five years, the museum has grown to over 2,000 instruments, and some 200 books published before 1860. There is enough furniture, some of it designed and handmade by the former owners to fit their needs, to furnish a replica of an office of a practitioner 75 to 100 years ago. Dr. B. B. Cates had a case made for his father's instruments many years ago and lamented the fact that the society in his day had no safe place to house it. He would be gratified if he could see the instruments today on display in the museum. So many of the descendants of the older members have been relieved to find a place to preserve the old books and instruments of their ancestors for which they had no place to adequately care for them. The museum has grown to include items from physicians from a greater part of East Tennessee. (Figs. 3-6.)

The home with the auditorium, library and the museum are the rewards that have resulted from the efforts of a closely knit, harmonious medical society. These, to-

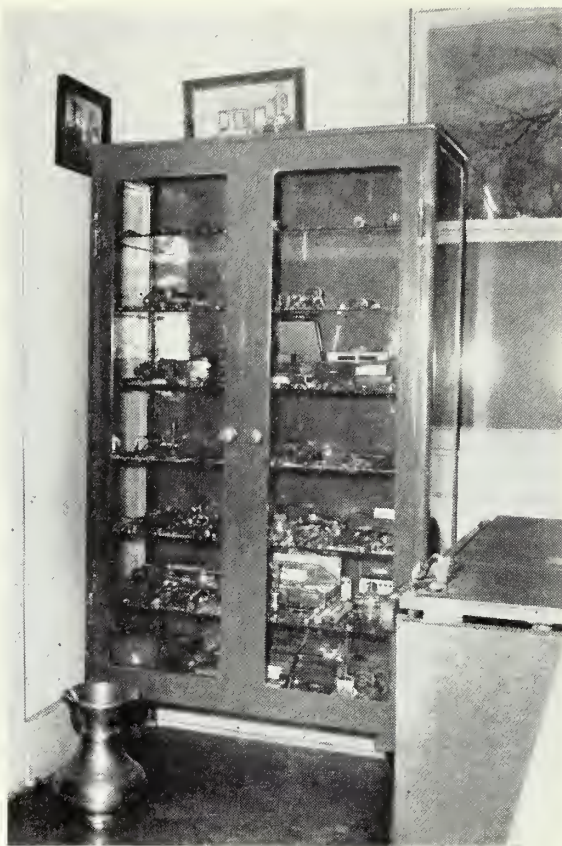


FIG. 3.

gether with the preservation of the old home, have been a factor in good public relations between the medical society and the local laymen, many of whom have a sentimental interest in the old home.

The current concept of good public relations has been actively cultivated by the Academy. Each year at the Tennessee Valley Agricultural and Industrial Fair the Academy has an educational booth with exhibits and a first aid station. Throughout the year medical education of the public is carried on through the press, live and filmed television shows, radio programs, and open forums for the free discussion of medical subjects of interest to the general public. The medical society has always supported the postgraduate courses offered by the Tennessee State Medical Association.

The Woman's Auxiliary to the Knox County Medical Society was organized in 1928, and has played an active supporting role to the medical society. It has assisted the society in many of its public relations projects and furnished much of the social activity enjoyed by the society. The local

auxiliary has provided seven presidents for the state auxiliary.

This abstract is forced to leave out many interesting features of the history because of the necessity for brevity. The appendix to the history contains a biographical section of some 400 biographies of former members, a list of the entire membership as accurate as could be compiled from existing sources, a list of the officers for all of the years available, interesting experiences of older members, obsolete prescriptions, the ceremony used for the installation of new officers of the Academy, the presidential oath which he signs and retains, and the membership pledge which is signed and retained by each new member as he is formally received into the Academy. In 1953, engraved membership certificates were presented to each member of the Academy. Incoming members are also given a membership certificate, and in addition, a copy of "Ethics," an interpretation by Dr. J. M. Kennedy, the "Principles of Ethics" of the American Medical Association, and the constitution and by-laws of the Academy. A

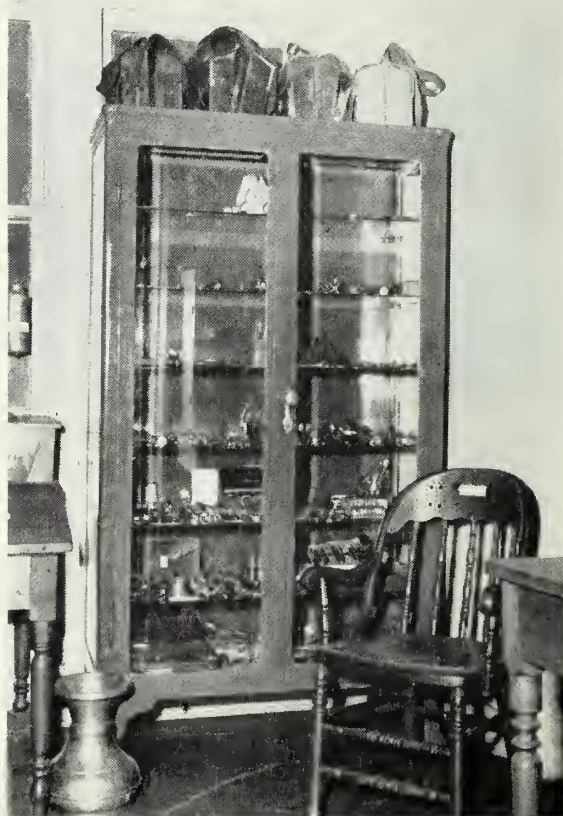


FIG. 4.

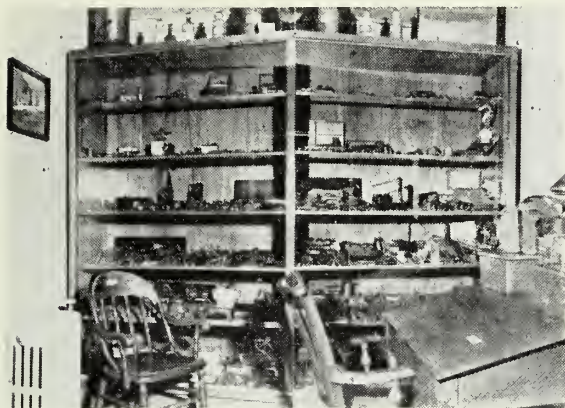


FIG. 5.



FIG. 6.

gold key is presented to each retiring president and a silver plaque to each retiring chairman of the Judicial Council.

The history is illustrated with an interesting collection of fifty pictures showing early scenes in Knoxville, the old medical college buildings, hospitals, the home, library, and museum.

It is very appropriate that the Academy close its first one hundred years with one of its faithful and well-known members presiding over the Tennessee State Medical Association—Dr. R. B. Wood.

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BOOK REVIEW

Organized Home Medical Care in New York City. A Study of Nineteen Programs by the Hospital Council of Greater New York. Published for the Commonwealth Fund by Harvard University Press, Cambridge, 1956. 521 pages. Price: \$8.00.

Home care of the chronically ill medically indigent patient is a necessary supplement to in-patient and out-patient hospital services, in order to provide comprehensive medical care. Although home care programs have long been needed, it required the impetus of an acute shortage of hospital beds in New York City to institute such programs under the direction of the Department of Hospitals. From the patient's viewpoint, home care has proved superior to hospital care in many instances, though proper selection of patients is of course essential. Authorities pretty well agree that the home care of a patient should include medical, nursing, social, physical therapy, occupational therapy and housekeeping services, if maximum benefit is to be obtained by the patient and his family.

The book here reviewed deals with a study of nineteen home care programs in operation in New York City. Sixteen of these are directed by municipal hospitals, two by private, voluntary hospitals, and one by the city Department of Welfare. The study is concerned with the qualitative and quantitative aspects of the various programs, as well as an evaluation of their achievements. Carefully selected patients and their families, selected by a medical statistician with an eye to good sampling, were interviewed to obtain their evaluations of the services rendered. Medical, nursing and social records of the patients were also carefully studied for the type and frequency of the service rendered, compared to the needs of the patient. Many deficiencies were uncovered, but much good work was brought to light in the course of the study. Much detail is offered, but a comparatively short section on summary and recommendations crystallizes the whole.

There has been a good deal of thought and action devoted to the care of the chronically ill of late. This book presents another facet of the increasingly important and difficult problem of the care of the long-term patient. It does a rather thorough job of dissecting home care services, but more important, it points the way to the development of a truly effective and comprehensive medical care program.

L. D. ZEIDBERG, M.D.

THE BLOOD VESSEL GRAFT

E. CONVERSE PEIRCE II, M.D., and C. HARWELL DABBS, M.D.,† Knoxville, Tenn.

It can be fairly said that blood vessel grafting in humans is an established procedure. Many hundreds of arterial grafts have been done for coarctation of the aorta,^{8, 9} aneurysms of the aorta and major vessels,^{2, 4, 13, 25} battle injuries of main arterial trunks,²⁴ occlusive arterial disease of the aorta,¹¹ iliac and, femoral arteries,^{6, 16} obstruction of the superior vena cava,⁵ and a number of other conditions.¹

It appears that failures in human cases have been infrequent. If anything, the human grafts have been superior to the experimental grafts in dogs. The oldest homologous artery grafts were done eight years ago and the patients are apparently doing well.⁹ Human grafts which have been examined histologically show that the elastica persists while the host supplies a new endothelial lining and a firm fibrous support. Blood vessel banks are springing up in numerous cities and attention is being directed to simpler methods of preservation and also to the substitution of plastics for homologous arteries. It seems pertinent, therefore, to review the available types of grafts with special attention to their indications and to discuss some of the general principles of artery grafting.

Autogenous Grafts

It is possible to form arterial substitutes by piecing small arteries into larger ones,¹² by utilizing reinforced pericardium, or by forming serous tubes reinforced by fascia.¹⁸ The most useful type of autogenous graft, however, is that made from a vein. Autogenous tissue has the distinct advantage that it is alive, can take part in the healing reaction, has a most physiological lining, and does not show late degeneration. A successful vein graft to replace an iliac artery was performed by Lexer in 1913. The use of veins, however, presents a number of difficulties. It requires sacrifice of a normal vessel; and in the case of the aorta, there is no vessel substitute that may be obtained readily. Vein grafts implanted in

the large arteries must be reinforced or they will develop aneurysmal dilatation. In addition, veins are somewhat harder to handle than arteries so that the technical aspects of the problem are more complicated.

There is, however, a present use for autogenous vein grafts. This is primarily in the treatment of disease of the distal iliac, femoral, and popliteal arteries. There is some difference of opinion concerning the incidence of success when such grafts are used.^{6, 11, 16} They have been successful, however, as replacement for small aneurysms,¹³ for bridging extremely long gaps caused by occlusive disease, and for bridging short gaps resulting from trauma. With careful technic a fairly high degree of success can be expected.²¹ The technic, however, is relatively difficult. The veins have a tendency to undergo severe spasm which makes the lumen small and complicates the placing of sutures.

Case 1. A 53 year old railroad man was found to have severe claudication in the calves on walking one hundred yards. There was no pain at rest. Physical examination showed the blood pressure to be 182/104. Femoral pulses were strong, but a loud bruit could be heard over the femoral and iliac regions bilaterally. Popliteal and pedal pulses could not be felt and there was mild dependent rubor. A translumbar arteriogram showed diffuse arteriosclerotic changes of the lower aorta and iliac vessels without significant narrowing. The superficial femoral artery was completely occluded bilaterally. A film taken after ten seconds delay, following the injection of 20 cc. of 70% diodrast, revealed a somewhat enlarged femoral artery starting blindly just above the popliteal space on each side.

It was elected to perform surgical reconstruction of the occluded vessels. The right thigh was explored first, the entire femoral canal being exposed. The distal saphenous vein, meticulously dissected from its bed, was anastomosed to the proximal common femoral artery previously prepared by endarterectomy of its bifurcation. Blood was allowed to flow through this arteriovenous fistula while the lower portion of the superficial femoral artery was prepared for anastomosis with the proximal saphenous vein. The graft carried blood well and both dorsalis pedis and posterior tibial pulses were immediately palpable. A similar operation was carried out on the left side after an interval of one week. The proximal endarterectomy was considerably more difficult

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and the initial pedal pulses were quite weak, so the patient was given aqueous heparin for 5 days. The operative result was excellent bilaterally and the patient was able to return to his regular work in one month. The patency of the grafts was demonstrated by arteriography and pedal pulses have remained strong bilaterally over an observation period of 18 months.

Comment. This patient has been completely rehabilitated by reconstructing his long segmental occlusions. His grafts are 42 and 47 cm. long respectively. Although he has considerable diffuse arteriosclerosis, he has no important involvement of small vessels and may well go for many years or indefinitely without further difficulty. Treatment of iliofemoral segmental occlusions is one of the most useful of present graft applications.

Homologous Arteries

Arteries obtained from other humans and preserved by one of several suitable meth-

ods are the most versatile tissues presently available for blood vessel grafting. There is probably no application of blood vessel grafting that cannot be taken care of by a suitable homologous artery (Figs. 1-5). There are two methods of preservation that may be carried out with relative ease. Other methods, as sterilization by irradiation or formaldehyde, either produce less satisfactory tissue or require equipment not generally available. The simplest method available is preservation of sterile tissue in a buffered nutrient medium that is kept just above freezing. This is the method that was used for the first homologous human grafts.⁹ It requires that tissue be taken aseptically within 6 to 12 hours of death, but contrary to generally accepted opinion, the tissue need not be discarded after 6 to 8 weeks, but may be kept for periods as long as 6 to 9 months. We still advocate use of this method of preservation where there is a reasonable supply of vessels.¹⁷ The second method is that of lyophilization, and this is extremely practical.²³ Tissue processed by this method may be obtained unsterily and treated with a sterilizing agent such as ethylene oxide, or it may be obtained sterily and have no special additional treatment. The apparatus for freezing and dehydrating is moderately expensive and this method of processing is considerably more time consuming than placing the vessels in a nutrient medium. Grafts once preserved, however, are kept at room temperature and are probably good almost indefinitely. They are reconstituted simply by placing them in saline containing antibiotics just prior to use. This is now the most commonly used method.¹

Unfortunately, it has been difficult to get small arteries easily. Special permission is required to remove the entire femoral artery and, as a consequence, when arteries of this type are needed we have generally resorted to transplanting autogenous veins.

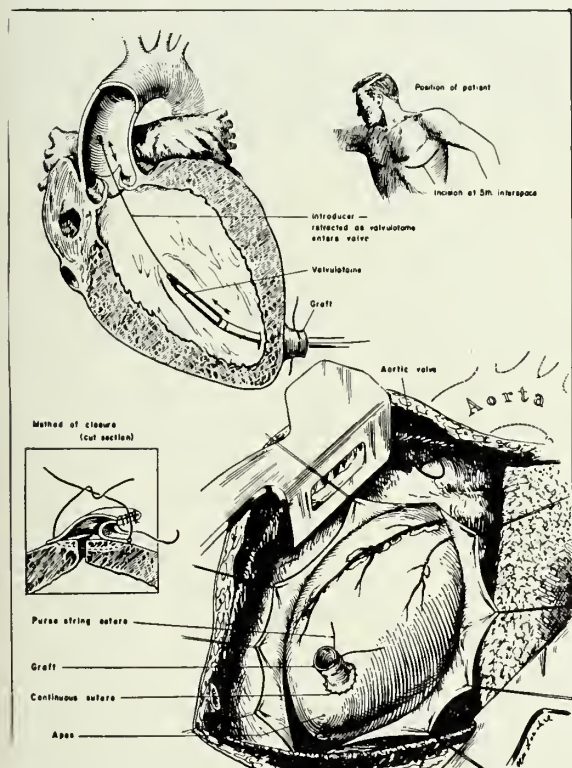


FIG. 1. A small segment of aorta may be sutured to the ventricle, the auricle, or to a great vessel in the manner shown to facilitate essentially bloodless entry into that structure. This has advantages over the use of rubber or plastic prostheses in that it is not necessary to remove the short section of graft later. It may be used instead to reinforce a cardiectomy or arteriotomy, thereby facilitating suture and minimizing the chance of delayed hemorrhage. The method illustrated was originally suggested by Dr. Charles Hufnagel in 1953.

¹A blood vessel bank sponsored by the East Tennessee Heart Association is currently supplying homologous arteries to Knoxville and the East Tennessee area. Vessels for this bank are processed by the Tissue Bank of the Naval Medical Center in Bethesda, Maryland. Information may be obtained from the East Tennessee Heart Association.

The homologous arteries are used for aortic and iliac substitution.

Case 2. A 58 year old white seaman had typical intermittent claudication of the right calf and mild rest pain. Examination showed his blood pressure to be 140/98. There was slight dependent rubor on the right, but no trophic changes. Pulses were normal on the left, but even the femoral pulse was absent on the right. A translumbar arteriogram showed complete segmental occlusion of the right external iliac artery.

At operation the thrombosed external iliac artery was excised and a lyophilized arterial homograft² was inserted to bridge the gap (Fig. 2).

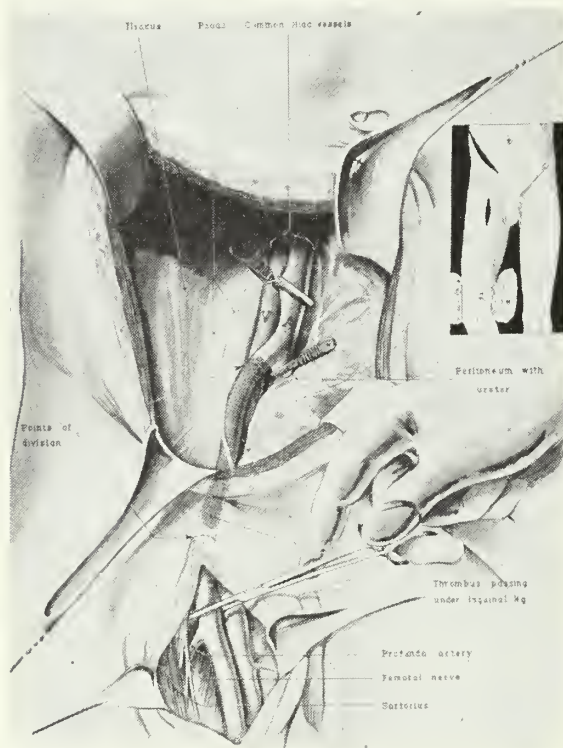


FIG. 2. (Case 2.) The method of exposing the iliac vessels and the upper femoral vessels simultaneously is illustrated. This type of occlusion is one of the simplest to handle, providing its exact anatomy is delineated preoperatively by arteriography.

A fairly extensive endarterectomy was required on the iliac bifurcation and common iliac artery. Postoperatively a good posterior tibial pulse could be felt. The patient was able to return to full duty as a seaman in 5 weeks, and examination at one year showed an excellent result.

Comment. This patient showed a rather typical segmental occlusion due to arteriosclerosis obliterans which seriously interfered with his work. Following reconstructive surgery, he was able to walk and climb without difficulty. Because of diffuse re-

sidual arteriosclerosis, such cases must be given a guarded prognosis.

Case 3. A 47 year old white man was found to have a pulsatile tender mass in the right groin which had been slowly enlarging during the previous six weeks. There was no history of injury or syphilis. The mass measured 10 to 15 cm. in maximum diameter and lay just below the right inguinal ligament. The right pedal pulses were somewhat inconstant but there were no other peripheral signs of arterial insufficiency. Laboratory data was unremarkable. A translumbar arteriogram delineated a fusiform aneurysm of the right common femoral artery arising at the level of the inguinal ligament from a normal superficial iliac artery and ending just proximal to normal deep and superficial femoral arteries (Fig. 3A).



FIG. 3A. (Case 3.) The aneurysm is of the common femoral artery and does not involve the superficial or deep branches.

At exploration the configuration of the aneurysm shown by arteriography was confirmed and its removal was quite simple. A 10 to 12 cm. lyophilized artery, the aorta of a 6 year old child, was used for replacement (Fig. 3B).³ The postoperative course was complicated by fever and examination of the aneurysm histologically showed it to be mycotic in origin. The patient made an uneventful recovery with normal circulation in the right lower extremity.

Comment. This case illustrates the relative ease with which peripheral aneurysms may be treated. All such lesions, whether seen before or after rupture, should be excised and replaced by a graft. An autogenous vein would have sufficed and can always be used for a ruptured peripheral aneurysm seen as an emergency. Where simple ligation is resorted to in cases of

²Graft kindly supplied by the Naval Medical Hospital Tissue Bank, Bethesda, Maryland.

³Graft kindly supplied by Johns Hopkins Hospital Vessel Bank, courtesy Dr. Henry Bahnson.



FIG. 3B. A homologous graft results in an essentially normal anatomic configuration. An autogenous vein would be suitable for this repair.

rupture, there is a high incidence of gangrene. The apparent mycotic character of this aneurysm was of special interest, and it is noteworthy that the presence of suppuration did not result in failure of the graft. On occasion, infection may result in serious hemorrhage with loss of a limb or, in an aorta, death.

Case 4. A white man, aged 57, complained of severe pain in the lower lumbar area of his back and in the left buttock on attempting any type of exercise. The pain would disappear quickly on rest and did not appear related to position. He had been followed for approximately eight years by a succession of doctors for back and leg pain, thought to be on the basis of hypertrophic arthritis. The blood pressure was 170/85. There was a marked left-sided limp. Neurologic examination revealed some evidence of nerve root pressure on the left side. There were, however, no peripheral pulses, and rather marked dependent rubor and pallor on elevation of the lower extremity were present. X-ray films of the lumbosacral spine showed severe hypertrophic arthritis and a translumbar arteriogram revealed a complete aortic block in the distal abdominal aorta and marked narrowing of the common iliac arteries (Fig. 4A).

Aortic reconstruction was undertaken because arterial insufficiency was considered to be the patient's most pressing problem. The patient was explored in the usual fashion through a long mid-line incision. The aorta and common iliac arteries were resected and a homologous lyophilized graft was inserted (Figs. 4C & D).⁴ Since it was necessary to sacrifice one hypogastric artery, a sympathectomy was done on that side. Postoperatively there was a return of the pedal pulses bilaterally and a postoperative arteriogram showed excellent patency of the graft and of the iliac artery (Fig. 4B). The patient was subsequently able to return to full duty as an American seaman and two years following surgery had no claudication. His arthritis has given him only minor difficulty.

Comment. Treatment of the Leriche syndrome is one of the most dramatic contributions of the arterial graft. Although he felt that grafting would be the ideal method of treatment, Leriche as late as 1940 advocated excision of the thrombosed area to prevent propagation of the thrombus, combined with high lumbar sympathectomy.¹⁵ This type of treatment now seems almost barbaric as increasing numbers of patients, many in the age group between forty and fifty, are being completely rehabilitated by excision of their segmental disease and arterial reconstitution with a graft. It is noteworthy that these cases may masquerade for years as back problems of different types.

Case 5. A 59 year old farmer was referred to the Clinic by Dr. A. D. Simmons for pain typical of ureteral colic of about two weeks' duration. There was a past history of high blood pressure of ten years' duration and a right sided stroke with complete recovery about three months before. Physical examination was not helpful except for a very questionable leftward displacement of the aortic pulse high in the abdomen. A retrograde pyelogram showed satisfactory patency of the ureters and no evidence of stones.⁵ In the abdominal films it was noted that there was a left-sided paravertebral calcified mass at the level of the first and second lumbar vertebrae which had displaced the left kidney laterally. A translumbar arteriogram revealed widening and tortuosity of the distal abdominal aorta.

Following negative urinary studies and the demonstration of an aneurysm by arteriogram, the patient was explored by a combined thoraco-abdominal approach. The aneurysm was excised and replaced by a homologous arterial graft.⁶ The aneurysm was found to have dissected into

⁴Graft kindly supplied by the Tissue Bank of the Naval Medical Hospital, Bethesda, Maryland.

⁵Urinary studies performed by Dr. Park Niceley.

⁶Graft supplied by the East Tennessee Heart Association Blood Vessel Bank.

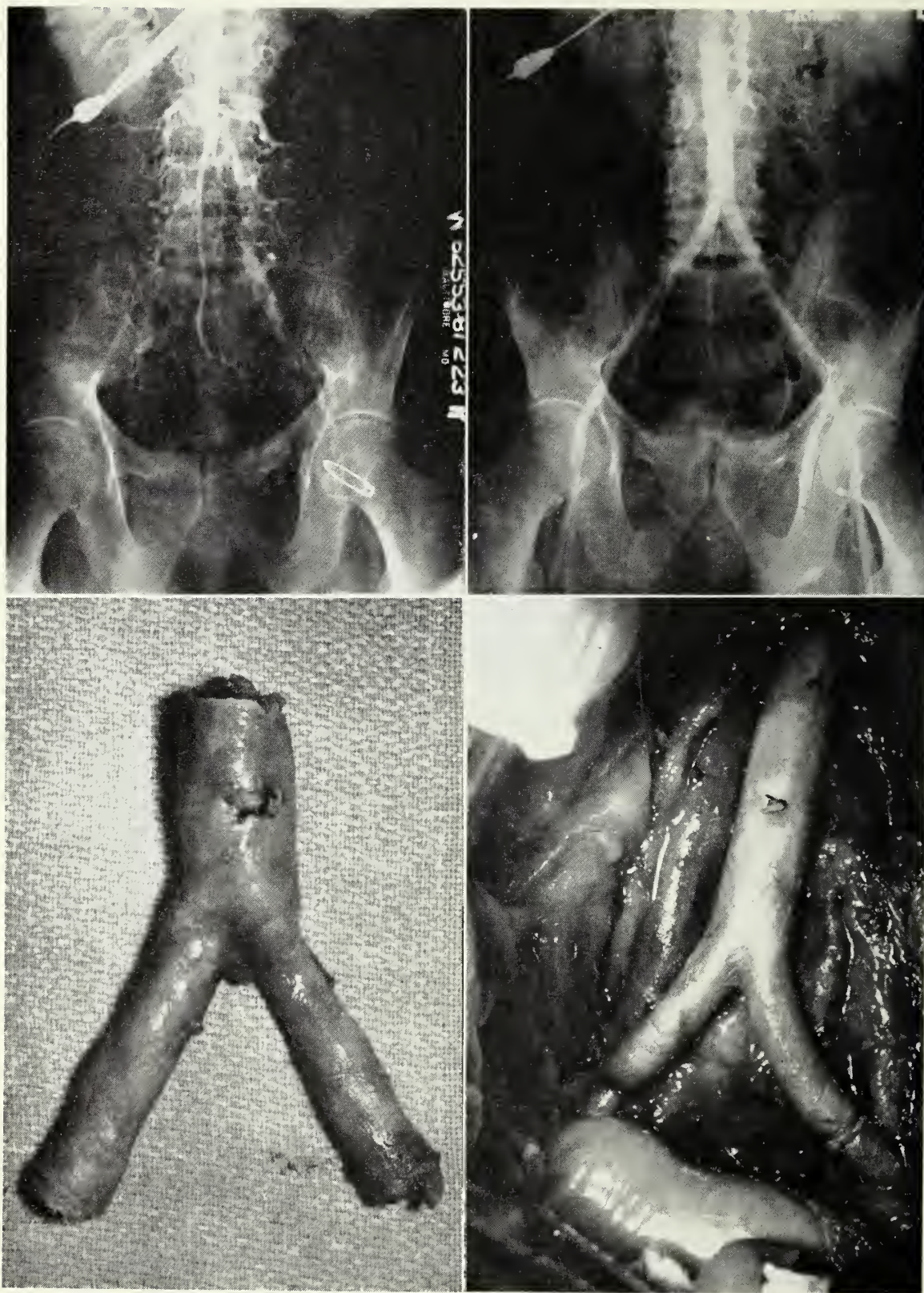


FIG. 4. (Case 4.) A. The abdominal aorta is occluded at the level of the third lumbar interspace. Here several lumbar collaterals are seen. A delayed film showed patent but narrowed iliac arteries. B. A postoperative arteriogram illustrates excellent patency of the graft with relatively normal iliac channels. One hypogastric artery has been sacrificed. C. The appearance of the resected specimen. D. The appearance of the graft in place.

the psoas muscle and to have eroded the anterior surface of the adjacent vertebral bodies. The aortic bifurcation in this case was not involved so that only a straight graft was required. The only important vessel divided was the inferior mesenteric artery. The postoperative course was marred by a superficial wound infection.

Comment. This case re-emphasizes that aneurysms may cause a wide variety of symptoms. A clinical picture simulating ureteral colic was produced by dissection into the left psoas muscle with irritation of adjacent lumbar nerves. More usual symptoms are vague digestive difficulties or somewhat atypical back and leg pain. Many aneurysms, of course, are associated with distal occlusion and the abdomen should be carefully investigated whenever peripheral pulses are abnormal. Unruptured abdominal aneurysms are not unusually difficult to treat. The vessels involved are large, many types of grafts or prostheses are suitable, and the technic need not be nearly as meticulous as is required in the handling of smaller peripheral arteries. This is one of the most important groups which may be treated by grafts, since it is the most frequent type of aneurysm, is reasonably common, and threatens the death of perhaps 50 per cent of the patients within a year after the onset of the first symptoms. Ruptured aneurysms also may be treated in like manner. At least 25 per cent of these live longer than six to eight hours. With alert, rapid treatment, a salvage rate of better than 50 per cent may be expected. In

the author's personal experience, there have been two survivors with successful grafts in three cases with rupture. The primary principle of treatment is to get control of the aorta above and the iliacs below as rapidly as possible (Fig. 5). Blood loss is then replaced, and the grafting itself can be done in a more leisurely fashion. All general surgeons should be sufficiently familiar with this condition to undertake immediate treatment.

Plastic Grafts

Plastic substitutes for arteries may be rigid or nonrigid. The rigid tubes are generally made of lucite. Although their use has been largely restricted to experimental applications, a rigid plastic graft incorporating a ball valve has been used with some success for treating aortic regurgitation.¹⁰ It is quite probable that a modification of this valve will permit far better treatment of calcific aortic stenosis also.²² Recent substitution of the silicone ball for a nylon ball has rendered these valves noiseless and has effectively prevented traumatic anemia.²⁷ The rigid plastics must be most carefully fitted to the individual artery. There is a tendency to use a graft that is too small, and when this is done there is grave danger of mural thrombosis at the end between the plastic and vessel wall which may subsequently result in serious embolization. In small vessels there is a marked tendency for thrombosis of the tubes to occur, and for this reason they are probably not suitable in humans except in the aorta.

Blood vessel substitutes fashioned from Nylon, Orlon, Vinyon N cloth or other flexible materials are much more versatile than rigid plastics.¹⁴ Although porous, bleeding through the wall is temporary and is not a severe problem. It can be reduced by priming the grafts with blood drawn from the patient. Grafts of this type produce excellent arterial pathways and have been studied extensively in dogs.^{3, 14} The plastic provides a strong scaffolding on which the host builds a new endothelial surface and the strands become enmeshed with fibrous tissue. Plastic cloth is considerably more difficult to handle than homologous arterial tissue. It is absolutely rigid as far as size goes, and sewing, especially where there

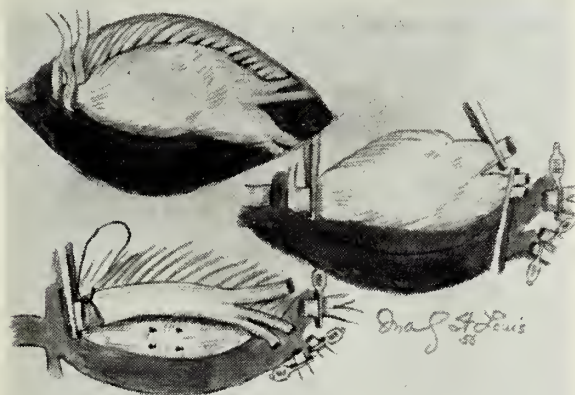


FIG. 5. A ruptured abdominal aneurysm is treated by rapidly gaining control of the aorta above and the iliac arteries below. A midline incision from xiphoid to pubis is suggested. As soon as the patient can be stabilized, resection and replacement of the aneurysm by any available material is done with relative ease.

are seams, is not easy. The use of plastic cloth in small vessels is not advisable at the present time as a higher incidence of thrombosis may be expected. Several recent developments are an improvement over the use of simple cloth. Woven tubes without seams are now available, even for replacement of the bifurcation of the aorta. Edwards has introduced the use of crimped woven Nylon tubes.⁷ This type of material can be used to by-pass joints, because flexion does not produce collapse of the tubes. The replacement of peripheral vessels with crimped tubing is promising. Its use with long by-passes may prove to be very satisfactory because of the difficulty of getting homologous vessels for this procedure. Plastic substitutes may also be made by wrapping thin sheets of polyethylene⁸ sponge about a suitable prosthesis and then autoclaving it. The resultant vessel is seamless and can be sewn with much greater ease than cloth. It can be fashioned for even very complicated anatomic situations and does not show temporary leakage of blood. This material appears to offer certain advantages for the replacement of such difficult areas as the aortic arch.²

It is certainly justifiable at the present time to use a plastic in an emergency or for large arteries where suitable homologous tissue is not available. The treatment of arteriosclerotic abdominal aneurysms constitutes the main use for plastics because of the limited availability of aortic bifurcations.

Discussion

A graft is not a panacea for arteriosclerotic occlusion, or for the treatment of arterial aneurysms. The only type of occlusive disease clearly responding well to grafting is isolated segmental disease. If there is pain at rest, gangrene, or impending gangrene, indicating extensive small vessel disease, the peripheral arterial bed may be unable to accept the added flow from the graft so that thrombosis results. In such cases grafting may be worthwhile, however, because one in five may be successful and save a limb. In certain types of aneurysms,

particularly in the chest, resection and grafting may be such a formidable procedure that it should be attempted only when control of the aneurysmal neck or plication of the aneurysm is impossible. This is true of aneurysms in the ascending aorta, arch, or proximal descending aorta where successful grafting requires the use of hypothermia, shunts, or both.²⁵

An operative philosophy that recommends blind exploration of arterial lesions without adequate contrast studies is a dangerous one and substitutes expediency for the best interests of the patient. Proper arteriograms will generally permit detailed consideration of the operative attack. They will almost eliminate unsuccessful explorations, and will permit more expeditious surgery to be carried out. Contrast studies are especially important in peripheral occlusions where one must have a satisfactory distal vessel to effect an anastomosis. Blind surgery may also leave unrecognized a more distal second block. Where vessels are hardened by sclerosis, it may not be possible to recognize a lumen at operation without actually incising the artery, and this may destroy important collaterals. For surgeons who do not have on hand a large selection of grafts, knowledge of the exact anatomic situation is essential to success. For these reasons, it is strongly recommended that interested surgeons gain facility in the performance of different types of arteriograms that may be required.¹⁹

A surgical procedure used for peripheral segmental occlusions should not endanger the viability of the limb. To avoid this risk no significant collateral should be disturbed. Sometimes this can best be accomplished by an end-to-end anastomosis, while at other times placing a shunt around the occlusion by end-to-side anastomosis will be best. A careful study of the arteriogram will enable the surgeon to choose the proper procedure.

Anticoagulants are not used routinely in the postoperative treatment of patients with arterial grafts. They are occasionally used when the vessels or grafts involved are particularly small or where blood flow is suspected of being inadequate. The main use of anticoagulants is during the actual operative procedure to prevent clotting in ves-

⁷C. R. Bard, Inc., Summit, New Jersey.

⁸Ivalon. Clay Adams.

sels temporarily occluded by clamps, and this is best done by injection of small amounts of concentrated heparin directly into the artery.

Apart from thrombosis of the graft or neighboring artery, the most important complication is infection of the suture line. In the experimental laboratory, controlled infection has been shown to lead to a high incidence of failure.²⁰ It has also resulted in a number of unpublished failures in human grafts and arterial anastomoses. Infection of the suture line in the aorta is likely to prove a fatal complication. In a peripheral vessel it will more frequently lead only to nonfatal hemorrhage or graft failure. We recommend that all graft cases be treated vigorously with antibiotics for ten days to two weeks and that broad spectrum antibiotics not be used because of the danger of development of infection with organisms such as *B proteus*, not usually pathogenic, which may subsequently prove refractory to all methods of therapy.

To avoid unnecessary complications and failures, surgeons performing grafts should have adequate experience, and this is most simply learned in the experimental laboratory. It is suggested that those entering the field for the first time utilize the most reliable material, the homologous artery, and attempt only the most straight-forward cases.

Summary

Arterial grafting has reached the stage of practicality and many hundreds of successful human grafts have been carried out for a wide variety of problems. Autogenous vein grafts are probably the tissue of choice for femoral and popliteal arteries. Suitably preserved homologous tissue may be used anywhere that grafts are needed. Rigid plastic tubes are indicated only for the insertion of valve prostheses. The nonrigid plastics are suitable for emergency grafting and may prove to be the material of choice for the aorta. Some of the general problems involved in artery grafting are discussed and five illustrative cases are presented.

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ANNOUNCEMENTS

West Tennessee Medical and Surgical Association

The Annual meeting will be held at Paris Landing Inn on Thursday, May 9, afternoon and evening, including dinner. Those wishing to stay overnight should make reservations with the Inn.

Obstetrics and Gynecology

The fifth Annual Interim Meeting of District VII of the American College of Obstetricians and Gynecologists will be held at the new Statler-Hilton Hotel, Dallas, Texas, April 12-13, 1957. A two-day program has been planned, consisting of scientific papers, unusual case reports, diagnostic and treatment clinics and a king-size round table. Doctor William P. Devereux, of Dallas, is Chairman of the Local Arrangements Committee.

American College of Gastroenterology

A regional meeting of the Central Region of the College will be held in Grand Rapids, Michigan, Sunday afternoon, March 17, 1957. The Scientific Sessions will be at the Hotel Pantlind commencing at 1:45 p.m. Members of the medical profession are cordially invited to attend. A copy of the program may be obtained from the Secretary, American College of Gastroenterology, 33 West 60th Street, New York 23.

Scholarship Contest

The Foundation of the American Society of Plastic and Reconstructive Surgery announces the Eighth Annual Scholarship Contest. Two prizes of \$1,000 and \$750 will be awarded to the two best essays upon original research in plastic surgery to plastic surgeons who have been in practice less than five years. Two other awards, consisting of silver plaques, will be awarded for the best research in plastic surgery by (1) a plastic surgeon who has been in practice more than five years and (2) a researcher outside the field of plastic surgery. For information, write Dr. Clarence Straatsma, President, Foundation of the American Society of Plastic and Reconstructive Surgery, 5 East 83rd Street, New York City

Cardiovascular Seminar

The fourth Annual Cardiovascular Seminar, sponsored by the Mississippi Heart Association, will be held at the University Medical Center in Jackson on April 1-5, 1957. Co-sponsored by the University of Mississippi School of Medicine and accredited by the American Academy of General Practice for 30 hours, Category I, the seminar will offer a seven-man visiting faculty.

American College of Allergists

The Thirteenth Congress and Graduate Instructional Course in Allergy will be held March 17-22, 1957, at the Palmer House in Chicago. The fee for this Instructional Course is \$50 for 3 days, \$35 for 2 days, and \$20 for 1 day. For information write to Dr. John D. Gillaspie, 2049 Broadway, Boulder, Colorado.

THE CLINICAL EVALUATION OF SERUM GLUTAMIC OXALOACETIC TRANSAMINASE ACTIVITY

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Introduction

Glutamic oxaloacetic transaminase (GO-T) is widely distributed in animal and human tissues, with its greatest concentration found in heart muscle. Other tissues which have shown considerable concentration are skeletal muscle, brain, liver and kidney. Table 1 shows the distribution of glutamic oxaloacetic transaminase activity in tissues.¹

Table 1

DISTRIBUTION OF GLUTAMIC OXALOACETIC TRANSAMINASE ACTIVITY IN TISSUE HOMOGENATES¹

Tissue	Dog	Human
Heart	320,000	156,000
Liver	200,000	142,000
Skeletal muscle	210,000	99,000
Kidney	43,000	91,000
Serum	20	28

It has been demonstrated that serum glutamic oxaloacetic transaminase activity (SGO-T) increases two to twenty times or more following acute transmural myocardial infarction, and will rise 20 to 2500 times normal in acute hepatitis due to toxic or infectious agents. The observation that the enzymatic levels were increased led LaDue and his associates² to estimate serum levels of this enzyme following acute myocardial infarction. Since that time considerable work has confirmed the original observations of LaDue. In addition, there is some experimental evidence, in dogs, that the peak serum aminopherase level bears a roughly qualitative relationship to the amount of infarcted muscle.³

Subsequent preliminary observations by various workers suggested that the serum transaminase levels would prove to be a valuable test in the differential diagnosis of

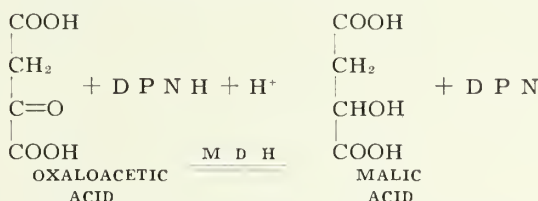
myocardial infarction, and also might be useful in the diagnosis and management of hepatitis.

At the present time data is accumulating concerning serum transaminase levels in various disease states. At this stage of clinical evaluation it would seem that SGO-T determinations have the most value in hepatitis and acute myocardial infarction, and as a helpful laboratory measure in the differential diagnosis and management of coronary artery disease with and without myocardial necrosis. As time goes on, undoubtedly, further evidence will accumulate regarding the value or limitations of this test in other disease states.

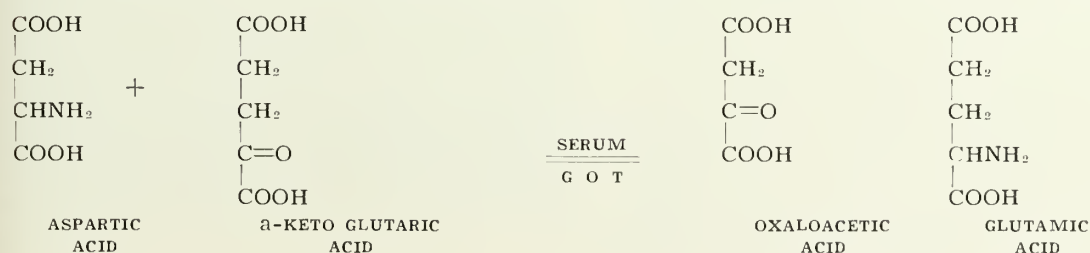
Materials and Methods

Glutamic oxaloacetic transaminase is an enzyme which catalyzes the reversible transfer of an amino group from glutamic acid to oxaloacetic acid, yielding aspartic acid and alpha-keto-glutaric acid.

Transaminase activity is measured by adding serum to a substrate containing aspartic and alpha-ketoglutarate, which, in the presence of malic dehydrogenase, oxidizes DPNH to DPN. The resulting change in optical density of the solution is measured in a spectrophotometer.



Serum glutamic oxaloacetic transaminase was measured by the spectrophotometric method. In our study venous blood was obtained for serum transaminase determina-



tion without regard for the fasting state. The serum was separated from the clotted blood within from two to twelve hours after collection. The activity is essentially unchanged if the separated serum is stored in the refrigerator from one to four days after collection.

The normal range of activity for human adult sera was found to be 5 to 40 units. SGO-T activity is not elevated in patients with infectious, neoplastic, degenerative, reactive, allergic or congenital disease states unless evidence of acute damage to liver, heart or skeletal muscle is present. It has been postulated that the probable mechanism in increase in SGO-T activity following acute myocardial infarction is the release of the enzyme from damaged cells into the blood stream. A metabolic or excretory alteration may also contribute to SGO-T elevation during liver cell damage.

This study was undertaken to extend our knowledge of the clinical applicability of this test. During the course of one year, from October, 1955, to October, 1956, a total of 800 serum transaminase determinations was ordered in the hospitals and laboratories of the Knoxville area. This study concerns itself with an evaluation of the conditions or clinical entities which the patients manifested when these determinations were made.

Myocardial Infarction

Data from 33 patients with acute myocardial infarction are summarized in Table 2. The diagnosis was clear-cut in all the

Table 2

PATIENT WITH PROVEN MYOCARDIAL INFARCTION WITH ELEVATED SGO-T

	Highest SGO-T Levels Obtained			
No. of Cases	40-60	60-100	100-200	above 200
33	9	7	8	9
No. of deaths	3	3	1	3

patients from the clinical manifestations and electrocardiogram. In this group there were nine deaths with four autopsies. In all instances the autopsies confirmed the diagnosis of acute myocardial infarction. The serum transaminase levels were elevated in all cases, the degree of elevation depending largely upon the time factor, in other words, when the serum transaminase determination was made in relation to the onset of the

illness. The highest transaminase level was 950 and the lowest was 42. There was no correlation between the height of the serum transaminase levels and the incidence of death or, as far as we could determine clinically, the prognosis of the myocardial infarction. Generally speaking, the serum transaminase activity was within normal limits within the first few hours after the attack, but within twelve hours the SGO-T rose to a high level, and gradually fell until normal values were obtained within five to six days after the attack.

Case 1. R. E. W., a 58 year old white man, was hospitalized on November 2, 1955, with a history of sudden onset of pain in the chest radiating to both arms. The serum transaminase determination taken on November 3 was 425 units. A graphic representation of his serum transaminase levels is shown in figure 1. The initial

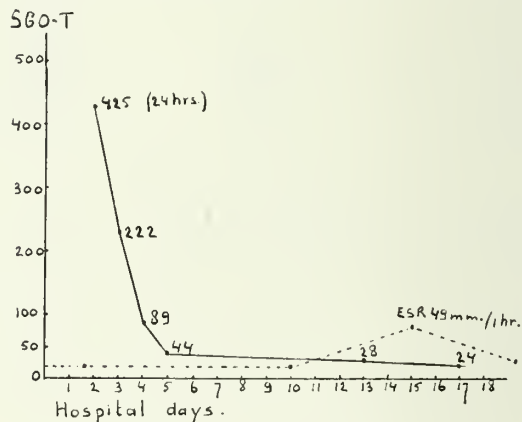


fig. 1: R.E.W.: SGO-transaminase activity following anterior myocardial infarction.

white blood count was 9,600 with a normal differential picture. The initial electrocardiogram demonstrated abnormal findings but was not diagnostic of acute myocardial infarction (Fig. 2);

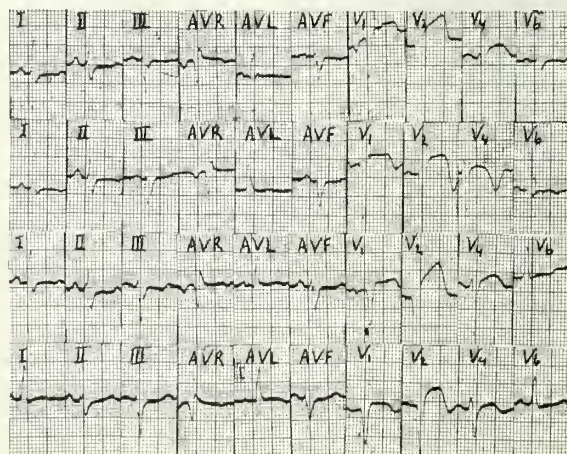


fig. 2. R.E.W.: 2nd, 5th, 9th and 22nd hospital day.

however, it became diagnostic by the fifth day after admission.

The admission temperature was 98.6°. By the afternoon of the first day, however, the temperature had risen to 100.4°. The initial sedimentation rate was 20 mm. per hour. By November 17, the sedimentation rate had risen to 49 mm. per hour. On November 14 and 17, the patient again had chest pain. However, serum transaminase values were normal, and it was the clinical impression that this represented anginal pain, rather than that of extension of a previous myocardial infarction.

Comment. This case represents the usual illustration of findings in acute myocardial infarction, substantiated by history, by electrocardiogram and by serum transaminase levels. It will be noted that the peak of the serum transaminase level was at 24 hours, and then the level gradually fell to normal on the sixth day. The value of serum transaminase levels in following a case of acute myocardial infarction is demonstrated also by the fact that when the patient had his chest pains on the twelfth and fifteenth days after his initial attack, the serum transaminase levels were normal, and it was felt that this was laboratory evidence, at least, that he did not have an extension of the myocardial infarction but rather that the pains were due to myocardial ischemia.

The case also demonstrates another point,—that when electrocardiographic evidence of acute myocardial infarction appears only after serial electrocardiograms, serum transaminase elevation may be the first laboratory evidence of infarction.

To demonstrate the value of serum transaminase determinations in following cases of myocardial infarction and in the differentiation of chest pain, after the initial pain from the acute attack has subsided, from ischemia or extension of the original infarct, we would like to present Case 2.

Case 2. D. F., a 35 year old white man, was admitted on May 30, 1956, because of severe chest pain, substernal in character, radiating into the neck and lower mandible and associated with numbness in the left arm. The pains were associated with cold perspiration, lasted only about 10 minutes and were intermittent in character.

The electrocardiogram on admission was not diagnostic, but subsequent electrocardiograms substantiated the clinical impression that the patient had acute myocardial infarction. (Fig. 3.) The serum transaminase activity on the day of admission was 28 units and the following day had risen to 82 units. The initial white blood count

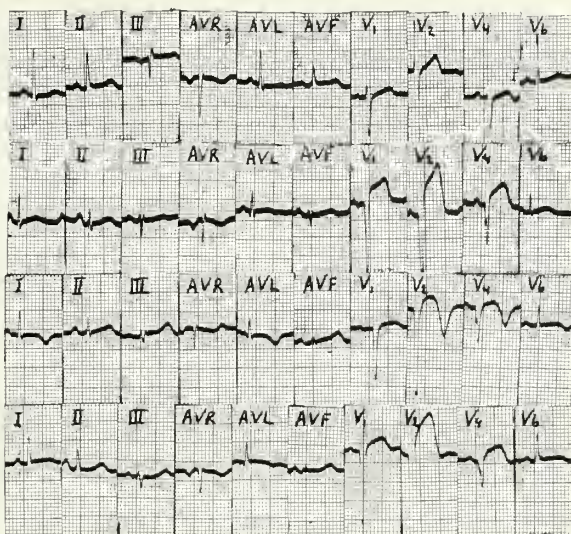


fig. 3: D.F.: 1st, 4th, 16th and 20th hospital day.

was 14,700; the initial sedimentation rate was 7 mm. per hour and the temperature was normal on admission. His course was then uneventful and SGO-T levels returned to normal.

On his twentieth hospital day he again developed severe chest pain of sudden onset, radiating down the left arm, and associated with symptoms and signs of shock. The serum transaminase level rose to 66 units and the electrocardiographic pattern changed. An interesting additional note was that this occurred despite the fact that the patient was on adequate anticoagulants.

Another instance in which serum transaminase levels are of value is in the "masked electrocardiogram," in which we have electrocardiographic patterns such as bundle branch block and in which it is impossible to recognize acute myocardial changes.

Case 3. G. H. D., a 67 year old white man, was admitted to the hospital on July 10, and expired on July 16, 1956. There was a history of two previous infarctions. On admission the patient clinically had a myocardial infarction, manifested by severe chest pain radiating down his arms.

The electrocardiogram demonstrated a left bundle branch block but was not diagnostic of acute necrosis. (Fig. 4.) The serum transaminase level on July 11, 24 hours after admission, was 950 units. The initial sedimentation rate was 1 mm. per hour. The white blood count was 21,700. He died on the sixth day.

Autopsy revealed acute myocardial infarction involving the posterior wall of the left ventricle.

Only one transaminase determination was made in this case. This is the highest transaminase level that we have obtained in acute myocardial infarction.

There were 8 cases of acute myocardial infarction proven by electrocardiographic patterns and by clinical history and physical

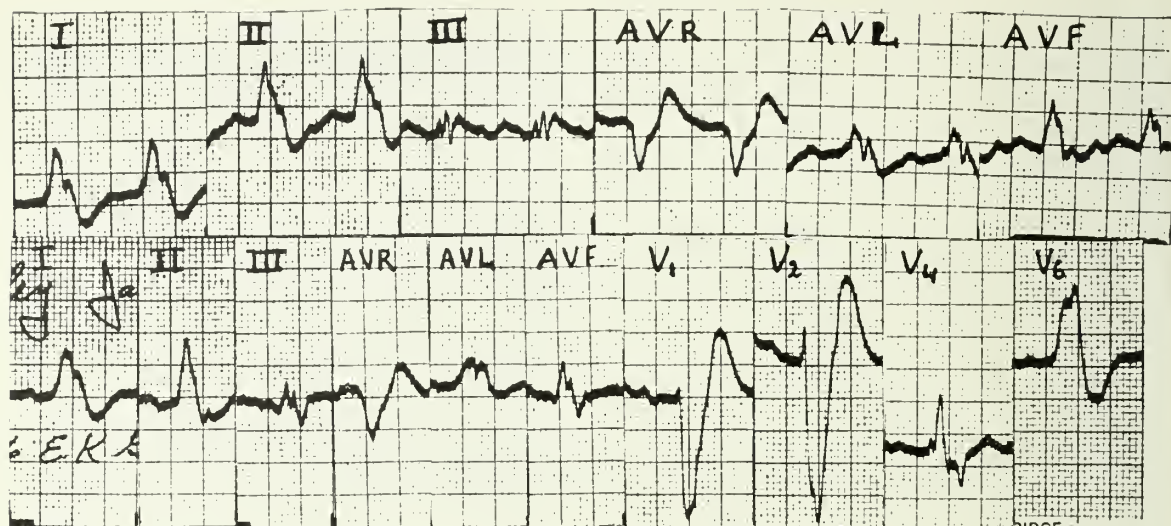


Fig. 4: J.H.D.: 1st and 3rd hospital day.

findings, with normal serum transaminase values. In 7 of the 8 cases, the serum transaminase determination was made either within the first five hours or after the fifth day. In the eighth case, W. N. (Fig. 5), serum transaminase values were determined on the second and fourth days of admission and were normal. The temperature, sedimentation rate, white blood count and differential were normal. On the sixth hospital day the patient developed a severe chest pain in the early morning and died that afternoon.

At postmortem an acute infarction was found of about 24 hours duration; thus in this instance no serum transaminase value was obtained following the onset of the acute myocardial infarction which caused his death.

This group of cases demonstrates the value of the proper timing of SGO-T de-

terminations. In most series of cases of acute myocardial infarction which have been reported heretofore, the serum transaminase values have been normal up to 6 to 10 hours following the onset of acute pain, and again are found to be normal 5 to 6 days after the onset of the pain.

Five cases showed elevated serum transaminase values with nonspecific electrocardiographic changes. In all these cases there were certain common denominators: namely, a clinical history of onset of severe chest pain, abnormal electrocardiograms demonstrating nonspecific changes, and no demonstrable evidence of any other disease except heart disease that could account for the elevation of the serum transaminase. In addition, all patients had a diagnosis of arteriosclerotic heart disease. There was no elevation of temperature with one exception, that being in a case of ventricular

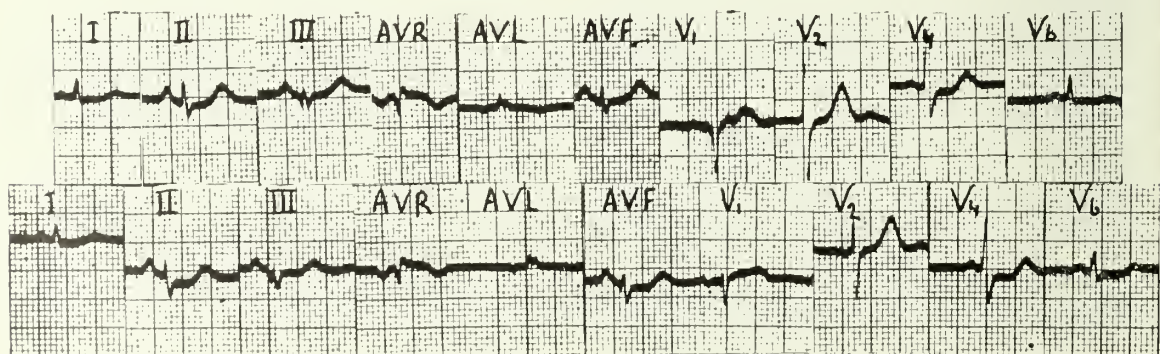


Fig. 5: W.N.: 1st and 3rd hospital day.

fibrillation. All had normal sedimentation rates. All of the patients lived, and in none of these cases was a diagnosis of acute myocardial infarction made by the clinicians. However, in all cases the diagnosis of myocardial infarction was considered. The following case is illustrative of this group of patients.

Case 4. M. H., a 54 year old white woman, who was hospitalized September 18 because of a sudden onset of paroxysmal auricular fibrillation. On her second hospital day she developed ventricular fibrillation. On September 23, five days after admission, she developed what apparently was a cerebral embolus.

Only one serum transaminase determination was made, and this was elevated being 120 units. Electrocardiograms demonstrated changing patterns, but the changes were nonspecific and it was felt that many of them could have been on the basis of drug effect. (Fig. 6.) During the entire course of the patient's hospitalization, the sedimentation rates were within normal limits. The picture was further complicated by thyrotoxic disease. The impression of the clinician in this case was that the patient had arteriosclerotic and thyrotoxic heart disease, complicated by ventricular fibrillation and a cerebral embolus.

Anginal Pain

This group of cases numbered 30, all diagnosed clinically as arteriosclerotic heart disease with severe angina. All of these pa-

tients gave typical clinical histories of effort angina. One case was complicated by an aortic stenosis. All complained of angina severe enough to suggest the need of ruling out acute myocardial infarction. In none of these cases were there electrocardiographic changes confirmatory of myocardial infarction, but in all there were abnormal electrocardiograms and in some of the cases there was electrocardiographic evidence of a changing pattern, usually manifested by T-wave changes of nonspecific nature. All of these patients had normal white blood counts, differential counts, sedimentation rates, and were without elevation of the temperature. In all cases the serum transaminase was within normal limits.

Case 5. H. A. This patient was admitted to the hospital with severe chest pain and ventricular tachycardia. He had a past history of myocardial infarction and arteriosclerotic heart disease with angina of effort. At no time did he have an elevation of his sedimentation rate or temperature. Blood counts and multiple serum transaminase determinations were all within normal limits. Initially the diagnosis of acute myocardial infarction was considered, but because of his nonspecific electrocardiograph pattern (Fig. 7) and normal SGO-T determinations, he was treated as having arteriosclerotic heart disease with ventricular tachycardia and anginal syndrome.

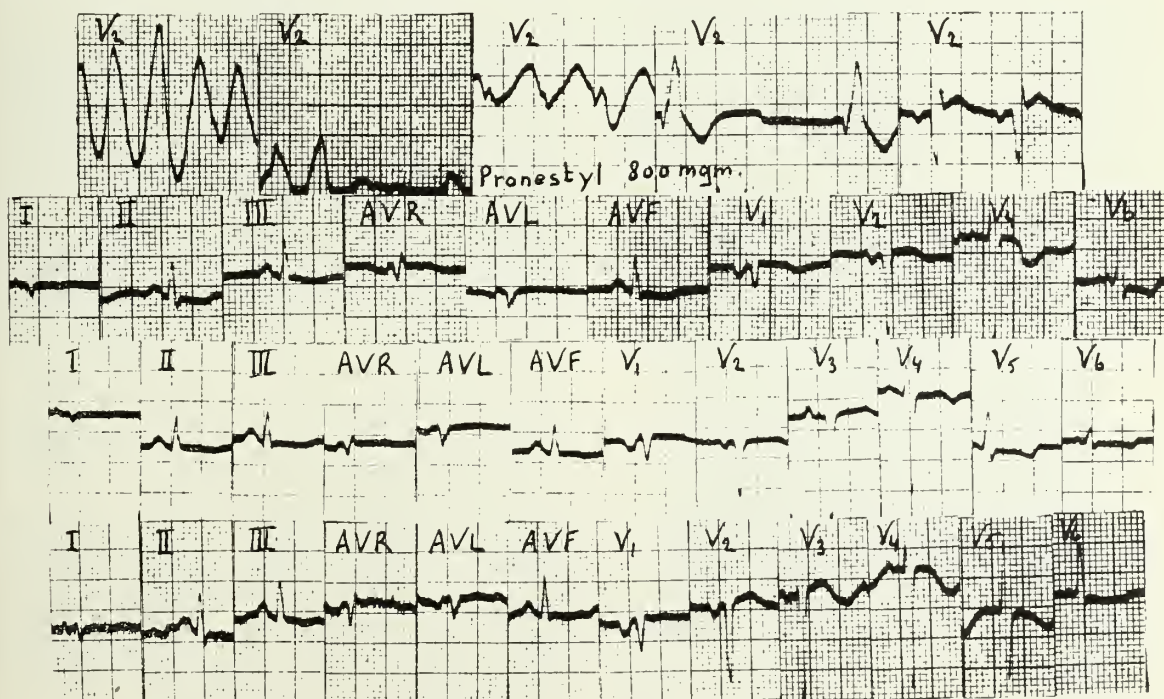


Fig. 6: M. H.: 2nd, 3rd, 7th and 14th hospital day.

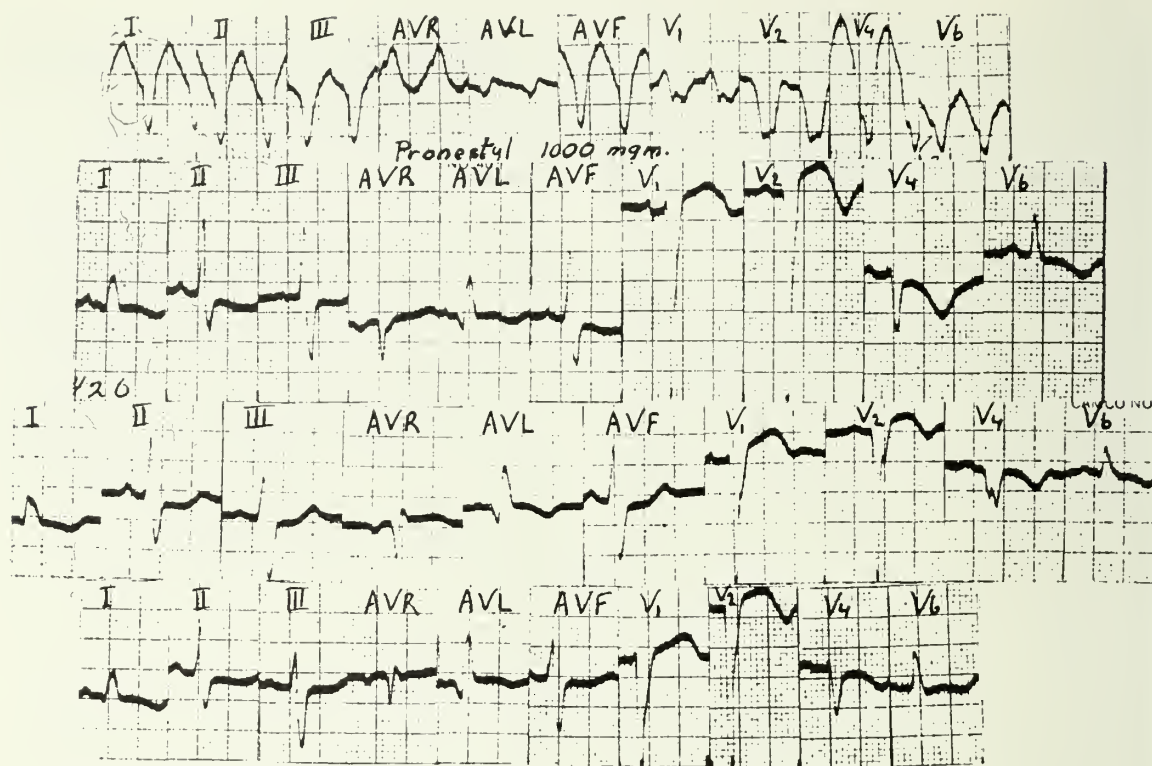


Fig. 7: H.A.: 1st, 2nd, 4th and 12th hospital day.

Case 6. K. W., a 61 year old white woman, had had one previous myocardial infarction. She was admitted to the hospital with a history of having had an emotional upset and, concurrent with this, severe chest pain radiating down both arms. The pain lasted for over four hours and continued to a moderate degree for a total of six hours, despite the use of opiates. The initial electrocardiogram demonstrated nonspecific changes. Subsequent electrocardiograms showed T-wave changes, particularly in lead I and V-4 position. (Fig. 8.)

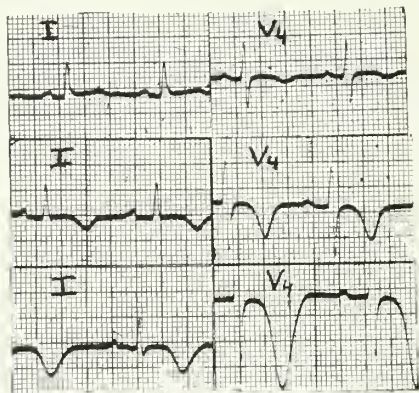


Fig. 8: K.W.: 2nd, 3rd and 13th hospital day.

At no time was there any elevation of temperature, white blood count or sedimentation rate. Serum transaminase determinations never rose above 20 units on repeated occasions. In this

particular case transaminase determinations were helpful in differentiating acute myocardial infarction from ischemia.

Liver Disease

Twenty cases of acute hepatitis demonstrated elevated serum transaminase levels much higher than those seen in acute transmural myocardial infarction. The highest value in acute hepatitis was 1500 units. Incidentally, in this particular case the hepatitis was not severe, and values rapidly fell over a two-week period and were roughly proportional to the clinical improvement of the patient. In all cases of hepatitis the serum transaminase values appeared to be proportional to the clinical course of the patient, and it would seem to be a valuable test in determining the severity, prognosis and clinical course of the disease.

Seven proven cases of cirrhosis of the liver demonstrated elevated serum transaminase levels, but these were not proportional to the degree of cirrhosis. One patient having hemochromatosis had a serum transaminase value of 41 units.

In 8 cases of extrahepatic obstructive jaundice elevated serum transaminase val-

ues were obtained. These values were not as high as those found in acute hepatitis. Generally speaking, this proved to be a point in differentiating hepatitis from extrahepatic obstructive jaundice. In hepatitis initial values were high and fell to normal with improvement in the patient, while in extrahepatic obstructive jaundice the serum transaminase values initially were not particularly high, varied considerably, and did not improve until the cause of obstruction was removed. A case of hemolytic jaundice had a serum transaminase level of 56,000 units. In this particular instance the patient was admitted to the hospital and expired five hours after admission. At autopsy there was an extensive infarct of the right lobe of the liver.

Miscellaneous

Serum transaminase values were determined in a variety of conditions in which the patient was not suspected of having acute myocardial infarction or liver disease. These included myocarditis, hypertensive disease with acute pulmonary edema, rheumatic myocarditis, congestive failure, cerebral infarction, cerebral embolism, leukemia, dissecting aneurysm of the aorta, pulmonary infarction, and two cases of renal infarction. All of these cases had serum transaminase levels within normal limits. Five cases of pericarditis were in this group. All of them had normal serum transaminase values except one who had an extensive tuberculous pericarditis with a SGO-T of 48.

A great many serum transaminase determinations were made on a group of patients having chest wall pain in whom there were

nonspecific or normal electrocardiograms, and the differential diagnosis included the possibility of myocardial disease. In every instance where liver disease could be excluded, the serum transaminase values were normal.

Summary

Serum transaminase levels were found to be elevated in all cases of proven acute myocardial infarction when the test was made in the proper time intervals. The upper limit of normal for serum transaminase levels has been set at 40 units. Elevation in acute myocardial infarction occurs from six to twelve hours after the onset of pain, and becomes normal within five to six days, providing there is no extension of the infarction. Patients with coronary insufficiency severe enough to produce marked ST and T-wave deviations did not show elevation of serum transaminase levels.

Serum transaminase levels are of value in early detection and subsequent management of hepatitis. In our series all patients with extrahepatic obstruction and cirrhosis had elevated SGO-T activity, but levels were not as high as found in acute hepatitis.

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THE SURGICAL MANAGEMENT OF ARTERIOSCLEROTIC ABDOMINAL ANEURYSMS

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For many centuries, the problems encountered in treating aneurysms of the aorta have challenged the ingenuity of the medical profession. The dramatic nature of these lesions and their steady progress until rupture occurs have made aneurysms both a challenging and, at the same time, frustrating problem.

Many methods have been employed in an effort to control the growth of aneurysms, but none have proved very effective. We may list the procedures as follows: 1. Methods designed to produce thrombosis,—(a) wiring, (b) banding, (c) wrapping, (d) ligation. 2. Methods designed to repair the diseased vessel,—(a) arteriorrhaphy, (b) reconstructive endo-aneurysmorrhaphy. 3. Methods designed to replace the diseased segment,—resection of lesion and grafting.

Moore,¹ in 1864, is credited with the first use of wiring an aneurysm to produce intravascular clotting, thereby hoping to strengthen the wall and avert rupture. Then in 1890, Macewen² reported good results from needling and scratching the inside wall of the aneurysm and thus causing the formation of a thrombus. Early in this century Halsted² attempted to solve the problem by using partially occluding bands above the aneurysm. This often resulted in complete interruption of the blood flow with ischemia of the distal parts. Blakemore³ revived and refined the intravascular wiring technique and added controlled heating of the wire to stimulate clotting. This was probably more satisfactory than some of the previous methods, but still the lesions often progressed to rupture or thrombosed completely. Another method consisted in the wrapping of the lesion with cellophane or other irritating substances. In the continued effort to find effective means of treating aneurysms, Blakemore revived the use of heavy rubber bands with, and without intravascular wiring with varying success.

Matas⁴ advocated arteriorrhaphy or reconstructive endo-aneurysmorrhaphy in 1903. This method is still used today for

saccular aneurysms, but is of little value in the fusiform aneurysms of arteriosclerosis.

Finally in March 1951, DuBost,⁵ a French surgeon, first resected an abdominal aneurysm and re-established continuity with a preserved homologous aortic graft. He was simply using a technique which Höpfner¹³ and Carrel⁶ had proven possible in animals early in the present century. This technique of resection and grafting has been widely used during the past five years. DeBakey, Cooley, Deterling, Gerbode and others have demonstrated the effectiveness of this method of treatment by successfully treating numerous patients for aneurysms of the abdominal aorta. It is indeed fortunate that this most effective technique for treating aneurysms has been developed at this time because our ageing population will be producing an ever increasing number of these lesions.

Pathology

Today by far the majority of abdominal aneurysms are caused by arteriosclerosis. The records of 22 cases of abdominal aneurysms in Knoxville Hospitals over the past five years were studied, and no evidence was found to indicate that syphilis was responsible in any. Estes⁸ studied 102 cases of abdominal aneurysms and found one was due to syphilis alone, two were due to syphilis and arteriosclerosis, one was due to trauma, and 97 were due to arteriosclerosis.

In an attempt to reconstruct the chain of events in the formation of an aneurysm. Blakemore,⁹ in 1947, postulated the following cycle. The diseased arteriosclerotic vessel has a poor blood supply, becomes weakened, loses its elasticity, and becomes elongated and tortuous. Then the sclerotic vessel is flexed in the groin and the lumen temporarily occluded by the stiffened, inelastic walls. The wave of back pressure thus produced is met by the oncoming pulse wave and a waterhammer effect is produced causing an added strain on the vessel. Then as the vessel begins to dilate, the strain in-

creases and an aneurysm forms. As the lesion grows it deviates to one side or the other of the midline, but usually pushes to the left. To us, a more simple explanation is that the diseased vessel becomes tortuous and the lateral thrust creates the aneurysm. About 98 per cent of these lesions involve the aorta below the origin of the renal vessels, and therefore, most abdominal aneurysms are resectable. They also involve one or both of the common iliacs in most instances. Syphilitic aneurysms usually involve the upper abdominal aorta just below the diaphragm. Arteriosclerotic aneurysms are usually fusiform and commonly do not erode vertebrae. They are usually filled with a thick laminated thrombus which has a fairly normal sized channel through it. The thrombus offers but poor support since the outer layers of the clot become soft and seminecrotic as it outgrows its blood supply. This feature also tends to incite a rather marked inflammatory reaction about it which increases the problems of the surgeon attempting to resect it. The wall of the aneurysm usually contains calcium, which assists in visualization by the X-ray. Since these patients have generalized arteriosclerosis, about 27 per cent of them have multiple aneurysms. Two of our group in whom resection was done had multiple aneurysms. One patient had a large abdominal aneurysm and, in addition, an aneurysm of the left common femoral artery. (Fig. 1, 2, and 3.) The other patient had an aneurysm of each common iliac artery. (Fig. 4.) Many of these patients also have coronary artery disease and eventually die of heart disease. (Case 3.)

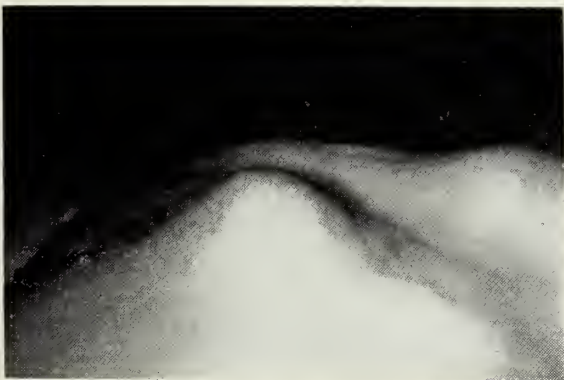


FIG. 1. (Case 6.) The left femoral and abdominal aortic aneurysms are shown.

Occlusive disease of the femoral and iliac vessels was present in 25 per cent of our series.

Incidence and Clinical Features

Abdominal aneurysms are more common



FIG. 2. (Case 6.) Homograft (left) replacing the aortic aneurysm, and with orlon tube extension to midhigh.



FIG. 3. (Case 6.) Specimen of aortic aneurysm above, and femoral aneurysm below. Note rubber band on external iliac artery above femoral aneurysm.



FIG. 4. (Case 4.) Bilateral aneurysm of common iliac arteries.

in men than in women, the ratio being about 5:1.⁸ We sometimes think of aneurysms as being rare lesions; however, 1.5 per cent of all bodies coming to autopsy in hospitals reveal the presence of an aneurysm of one kind or another.¹⁰ In about 55 per cent of these deaths the aneurysm was considered a major contributing factor in the death of the patient. Hypertension is said to be frequently associated with abdominal aneurysms,⁸ the figure usually being between 35 and 60 per cent. As one would expect, these patients are in the older age group. Estes⁸ found that 72.5 per cent of his series were above 60 years of age, and only 6.9 per cent were below the age of 50. We have noticed that many of our patients are heavy smokers, and are, or have been, heavy users of alcohol.

Many studies have been made to determine the clinical course patients having aneurysms may take. Estes⁸ studied 102 patients having abdominal aneurysm and found that about 33 per cent will die in one year and about 50 per cent in three years.

None of this group lived 10 years. The size of the lesion has a great deal to do with the prognosis. Crane¹¹ found that of the lesions larger than 7 cm., 82 per cent died of rupture within six months after the diagnosis was made. The presence of symptoms is a serious prognostic sign. Cranley¹⁰ investigated this feature and found that 63 per cent of his patients died of rupture within three months after onset of symptoms. He concluded that if an aneurysm is symptomatic, every effort should be made to attack the problem surgically.

Symptoms

What, then, are the symptoms which make us suspect an aneurysm? In fact, in 30 per cent of patients there are no symptoms prior to rupture.⁸ However, there are certain symptoms which are common enough to be of significance. Pain in the abdomen or back noted especially upon sitting or leaning forward is probably the most constant symptom. Pain referred to the hip has been noted. Weight loss is another fairly common feature but, of course, is non-specific. Many patients will notice the pulsating mass in the abdomen when they lie down. Some patients complain of claudication in the legs because of associated occlusive disease. In three of our patients, there was vague pain down the left thigh to the knee. We feel that this was probably due to irritation of the genitofemoral and obturator nerves. Finally, the most dramatic symptoms are those associated with rupture of the aneurysm. The patient complains of excruciating agonizing pain in the back and abdomen radiating down to each groin. Shock usually follows, but may be delayed 24 hours or longer. Abdominal distention commonly develops. Death is usually not immediate in ruptured aneurysms. (Table 1.) Only 20 per cent of

Table 1

RUPTURED ABDOMINAL ANEURYSMS IN KNOXVILLE HOSPITALS, 1951-1956

Sex	Age	Interval Before Death
M	56	10 das.
M	81	9 das.
M	66	17 hrs.
F	74	0 hrs.
M	58	3 das.
M	63	Undetermined*
M	55	24 hrs.
M	58	Operated upon 5 hrs. after rupture
M	73	Operated upon 3 hrs. after rupture

*Transferred from another hospital

Crane's¹¹ series of patients having ruptured aneurysm died within six hours of hospital admission. In our series of patients not operated upon only two of seven died in less than 17 hours after rupture. This indicates that there is time for adequate preparation for operation in the majority of patients with ruptured aneurysms.

Rupture usually occurs in the retroperitoneal tissues and bleeding slows down when shock develops. Fatal hemorrhage then occurs when the blood pressure again rises. Rupture of an aneurysm is not necessarily precipitated by physical strain. The patient may be at rest or even asleep when rupture occurs. Bleeding may occur into the free peritoneal cavity, but this is uncommon. In some instances the aneurysm ruptures into the gastrointestinal tract producing massive hematemesis. Pratt-Thomas¹² found the site of rupture in 41 out of 548 aneurysms to be in the gastrointestinal tract. Thirty-two of these lesions ruptured into the duodenum. Gangrene of the sigmoid colon caused by thrombosis of the inferior mesenteric artery has not been reported, but it was the presenting complication in one of our cases.

Diagnosis

If the diagnosis of abdominal aneurysm is to be made, we must maintain a high index of suspicion. In any patient in the older age group presenting himself for examination, especially if he complains of abdominal or back pain, or if he has symptoms of claudication, this diagnosis must be considered.

The diagnosis can be made in about 88 per cent of these cases by palpating a mass in the abdomen.⁸ The mass is usually surprisingly high in the epigastrium and extends into the left flank. It is important to try to compress the mass from each side in order to be sure it is not a strongly pulsating normal aorta. The size of the aneurysm can thus be estimated. In 86 per cent of the cases the diagnosis can be confirmed by demonstrating a calcified ring on P. A. and lateral X-ray films of the abdomen.^{8, 10} (Fig. 5.) In 15 of 17 aneurysms studied by Crane,¹¹ the lesion could be shown by X-ray examination.

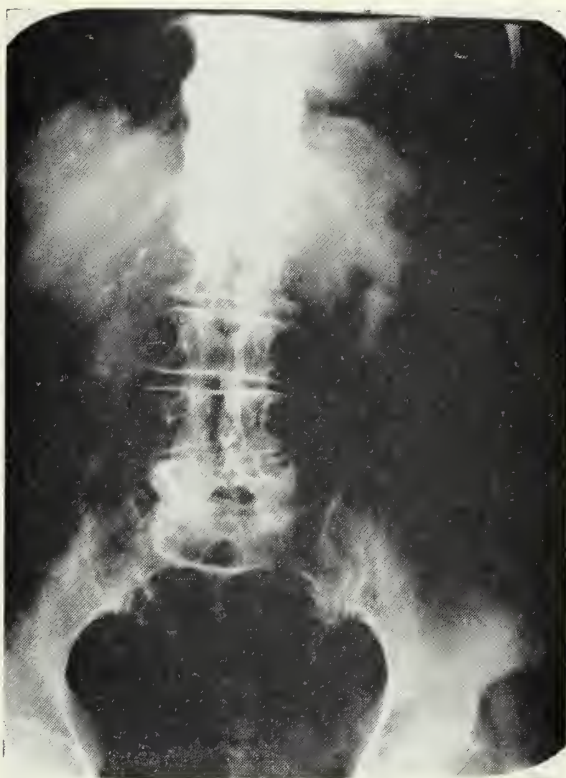


FIG. 5. Film of Abdomen showing calcified wall of large abdominal aneurysm to right of midline, L-2 to L-5.

Aortography is not routinely recommended in the diagnosis of large abdominal aneurysms. The most important use of aortography in aneurysms is in determining the presence of small aneurysms and in determining the patency of the iliac and femoral vessels. In at least one of our cases it was valuable in helping us plan the proper procedure by demonstrating a block in the iliac artery. (Fig. 6.)

Laboratory findings are of little help in diagnosis except after rupture occurs. Then the white blood cell count is usually elevated to between 14,000 and 20,000, but was noted as high as 52,000 in one case. There is a marked shift to the left of the polymorphonuclear count. The hematocrit may not be low at first but soon falls. The urine usually contains albumen and some red blood cells.

Treatment

Most authors agree that the outlook is very poor in untreated aneurysms. Not only may resection and grafting spare the life of the patient by preventing rupture, but it will also put an end to the terrible



FIG. 6. (Case 5.) Aortogram showing narrow and irregular channel; no filling of iliac artery on right.

apprehension under which these unfortunate patients live. Once these patients learn their diagnosis they live in constant fear that each beat of the heart will bring disaster.

The treatment of choice then is resection of the aneurysm and replacement with a graft, either a homologous artery graft or one of synthetic material. Surgery should be strongly recommended in all cases of aneurysm of the abdominal aorta if the age and general condition of the patient are not such that the risk of operation would outweigh the possibility of rupture. Surgical treatment becomes mandatory if the lesion is growing larger, is tender or painful. These features indicate impending rupture. Severe pain or other signs of bleeding constitute an absolute surgical emergency if the patient is considered at all salvageable. Admittedly, the operative mortality is high after rupture, but without surgery there is no chance to survive. DeBakey and Cooley⁷ reported an operative mortality of 35 per cent in ruptured abdominal aneurysms against a mortality rate of 9 per cent in unruptured cases. This is certainly a strong incentive to resect aneurysms as an elective procedure.

Choice of Material for Grafting

A great deal of discussion has arisen as to whether it is preferable to use plastic prostheses or to use homografts in repair of aortic defects. Some of the advantages and disadvantages of each material are presented below:

Synthetic Materials

<i>Advantages</i>	<i>Disadvantages</i>
1. Available	1. Excessive blood loss
2. Cheap	2. Difficult to suture
3. Durable	3. Anatomic arrangement of branches lacking
	4. Possible carcinogenic factor
4. Easily sterilized	

Homografts

1. Ease of handling	1. Expense in time and equipment
2. Branches conform to defect	2. Difficulty in processing
	3. Calcification
	4. Difficulty in obtaining suitable grafts
	5. Tedious preparation at time of use
	6. Danger of infection and rupture

The committee for the Study of Synthetic Vascular Prostheses collected several hundred clinical cases in which synthetic grafts were used. There appeared to be no significant functional difference in the aorta between synthetic fabrics and homografts. The choice of replacement grafts is simply a matter of personal preference on the part of the surgeon depending upon the availability of materials, his familiarity with the technical aspects of their use, and the surgical situation to be met.

Technique

Many operators use general anesthesia, but we prefer to use epidural anesthesia. A long midline incision from the xyphoid process to the symphysis pubis affords adequate exposure. The small bowel is packed away in the right upper quadrant. The posterior peritoneum is divided up to the ligament of Treitz. The duodenum is mobilized and the aorta is isolated just below the renal arteries and then control of the vessels distal to the aneurysm is obtained. The aorta is cross-clamped with a special nontraumatic clamp below the renal arteries. Heparin solution, 20 mg., is injected distally to prevent thrombosis while the aorta is clamped. The aneurysm is re-

moved from below upward, taking extreme care not to damage the vena cava to which it is densely adherent, or the left ureter to which it is closely fixed. If necessary, one may leave the posterior wall of the aneurysm attached to the vena cava. The gap in the vessels is then bridged with a suitable graft suturing it to the host artery above with 4-0 silk, and to the best arteries available below with 5-0 silk. It is important to preserve the hypogastric vessels because symptoms of claudication of the hip, or more serious complications such as necrosis of the rectosigmoid colon may follow ligation of both hypogastrics. This is a more real danger since the inferior mesenteric artery must always be sacrificed. In two of our cases, the blood supply of the colon was jeopardized, one patient was found to have frank gangrene of the sigmoid colon, in the other the left hypogastric was ligated and the right hypogastric was anastomosed, but this patient developed bloody mucoid rectal discharge on the fourth postoperative day which we attributed to ischemia of the rectosigmoid colon. When the anastomoses have all been completed the suture lines are tested by removing the distal clamps first, and then the proximal clamp is released allowing the full arterial stream to pass. Leaks are controlled with finger pressure or additional sutures are placed. When hemostasis is assured the graft is carefully covered with tissue and peritoneum so it will be revascularized. This also helps to prevent erosion of the gastrointestinal tract by the graft. The abdomen is then closed with through-and-through figure of eight stainless steel wire sutures. The patients are usually up on the second or third postoperative day, and out of the hospital in 7 to 10 days. Antibiotics have been used for 12 to 14 days to avoid infection, but this perhaps is not essential.

Case Histories

Case 1: W. H. H., a 58 year old man, a heavy smoker who used a moderate amount of alcohol in the past. While fishing in April, 1955, he collapsed with sudden severe pain in the right flank, back and abdomen. His internist diagnosed ruptured abdominal aneurysm in the emergency room. There was a past history of backache, weakness of knees and hips for two years, though no claudication or impotence.

Five hours following the acute onset the ruptured aortic aneurysm with the bifurcation was excised and replaced with freeze-dried homograft. He was discharged on the 14th postoperative day after an uneventful recovery. In May, 1955, he had an episode of paroxysmal auricular fibrillation which was converted. He complained of some weakness of his legs and aching in the back until November 1955. His pulses, however, were always excellent. Blood pressure was 130/80.

A ventral incisional hernia of inferior portion of the previous midline incision was repaired in June 1956. Fourteen months after its insertion, the homograft was found to be soft, pliable, and of normal size.

Case 2: C. B., aged 54, a heavy smoker and a heavy user of alcohol in the past, was discovered on physical examination by his family doctor to have an abdominal aortic aneurysm in July, 1954, at which time, he complained of pain in the medial aspect of the left thigh. Two unsuccessful attempts at aortography had been made elsewhere. Blood pressure was 120/90; all peripheral pulses were good. The aneurysm measured approximately 15x21 cm.

On June 12, 1955, an abdominal aortic aneurysm extending into the iliac bifurcation bilaterally was excised and replaced with a seamed Nylon bifurcation graft under epidural anesthesia. The postoperative course was uncomplicated.

In December, 1955, an appendectomy was done for gangrenous appendicitis, at which time the graft was palpated and found to be pliable and of normal size. In November, 1956, there is no claudication and he has excellent pulses.

Comment: It is interesting to note that the patient developed gangrenous appendicitis 5 months after the excision of the aortic aneurysm. The question arises whether an appendectomy should be done at the time of the original aortic operation as advocated by some surgeons.

Case 3: L. N., a 53 year old man, who smokes a pack of cigarettes a day and does not use alcohol, was first seen in February, 1954, for a pulsating mass which the patient had noted and which was found to be an aortic aneurysm. He complained of backache; there was no change in his sexual potency. The past history revealed that he had a coronary occlusion substantiated by E. K. G. in May, 1953.

Blood pressure was 110/70. The aneurysm was approximately 10 cm. in diameter. He was referred elsewhere for definitive surgery where, because of the past history of coronary occlusion, the abdominal aneurysm was wrapped with cotton gauze and a right inguinal hernia repaired. His postoperative course was complicated by evisceration.

During the year 1954, the aneurysm remained about the same size, but in May, 1955, the aneurysm was larger. He complained of more back pain. The peripheral pulses were excellent. He was advised to have excision and replacement

with graft. An E. K. G. showed a previous healed posterior myocardial infarction.

In August, 1955, under epidural anesthesia, an abdominal aortic aneurysm, 10 cm. in width, by 15 cm. in length, beginning 1.5 cm. below the renal arteries and involving the iliac bifurcation, was excised and replaced with an Orlon knitted bifurcation graft. There was extensive fibrous reaction about the aneurysm and cotton gauze was found covering it, with adherence of the left ureter to the gauze. The patient was discharged on the seventh postoperative day, his backache being relieved. Sexual potency was the same as preoperatively.

On May 28, 1956, 10 months postoperatively, he had an acute massive coronary infarction and expired 24 hours later. Autopsy confirmed this diagnosis and the aortic graft was not dilated and was patent throughout with a dense fibrous tissue surrounding the graft.

Comment: The dense fibrous tissue was found to have pulled the limbs of the graft into transverse corrugated folds which did not interfere with the flow of blood.

Case 4: L. M., aged 57, a chronic alcoholic, was examined in the County Jail and found to have an abdominal aneurysm. He was a heavy smoker. He complained of abdominal pain; the pulses were excellent.

August 30, 1956, under epidural anesthesia, bilateral aneurysms of the common iliac arteries, which were 4 by 8 cm. on the right and 3 by 5 cm. on the left, were found. There was a healed posterior duodenal ulcer with partial obstruction. The aorta from 2.5 cm. below the renal arteries, both common iliac aneurysms, and their bifurcations were excised. Replacement was with a seamed Nylon graft, anastomosing the right external iliac and right hypogastric arteries and the left external iliac artery and aorta, was done. The left hypogastric artery was ligated.

The postoperative course was excellent except for transient bloody mucous stools thought to be due to impaired circulation in the sigmoid colon secondary to ligation of the inferior mesenteric and hypogastric arteries. On the 13th postoperative day he left the hospital without permission and was found intoxicated several days later in a neighboring state. In July 1956, he had no complaints and all pulses were excellent.

Case 5: W. T. B., a 70 year old man who did not use alcohol and smoked one-half pack of cigarettes per day, was first seen September, 1955, with a three week history of sudden lumbar pain and numbness of the right leg which occurred while raising a wooden pole in his barn. He had noticed bilateral claudication for approximately two years after walking one block; there had been a weight loss of 15 lbs. in two years, and he had been impotent for two years also. There was an aortic aneurysm approximately 10 cm. in diameter with lack of peripheral pulses in the right leg. An aortogram and femoral arteriograms revealed thrombosis of the right common and external iliac

arteries and the profunda femoral. The right superficial femoral artery was patent but showed arteriosclerotic changes.

At operation on October 7, 1955, a large abdominal aortic aneurysm extending above the renal vessels was found with thrombosis of the right common iliac and external iliac arteries. Because the aneurysm extended proximal to the renal arteries, it was elected to reinforce the aneurysm with Nylon cloth. A bilateral lumbar sympathectomy was done.

By December, 1956, the aneurysm has not increased in size, the patient's complaint of claudication is still present.

Case 6: B. J., a 56 year old man with a past history of heavy alcohol ingestion and smoking, was explored elsewhere for a left femoral hernia in May, 1951, at which time a left femoral aneurysm was found instead. Later a left lumbar sympathectomy was done and a heavy rubber band ligature was placed proximal to the femoral aneurysm around the external iliac artery. He was first seen by us in December, 1955, complaining of severe claudication in the left leg and with a slightly pulsating left femoral mass, 8 cm. in diameter. A large abdominal aortic aneurysm was found. Good pulses were present in the right leg, but none in the left leg. Blood pressure was 170/100.

On January 25, 1956, an aortic aneurysm 15 cm. in diameter, arising below the renal vessels and involving both common iliac, the external iliac and hypogastric arteries bilaterally, was excised. The left femoral aneurysm involved both the profunda and the superficial femoral arteries and was also excised. A rubber band was found to completely occlude the left external iliac artery just above the inguinal ligament. Replacement was done with a homograft, anastomosing the right external iliac and right hypogastric arteries and ligating the left hypogastric artery. An Orlon knitted graft was joined to the iliac artery of the homograft in order to obtain the desired length and, in turn, the Orlon graft was then anastomosed to the superficial femoral artery on the left. Excellent pulses were present bilaterally at completion of surgery.

In February 1956, an abscess of the wound in the left groin was drained and packed. At this time, the Orlon graft was visible and functioning well. The wound gradually closed in but a sinus tract remained. The sinus tract and Orlon graft were removed in August 1956, and a crimped Nylon graft inserted between the external iliac artery of the previously applied homograft above and the superficial femoral artery below. The homograft was found to be soft and pliable but was thin walled. The wound healed without complication under Chloromycetin therapy. His sexual potency is the same now as preoperatively and he does have ejaculation. He is able to walk one mile without claudication.

Case 7: G. T., this 73 year old man was seen at home by his family doctor, in shock and with

a pulse rate of 120. Examination showed a large pulsatile mass in the upper abdomen. He had had vague upper abdominal discomfort for one week, and had had shortness of breath. There was a history of claudication in both legs, worse on the left side, for six months. The immediate illness began with severe sudden upper abdominal pain referred to the back, followed by collapse.

After admission to the hospital, one hour after rupture, his red cell count was 3,850,000, P.C.V. was 38%, white cell count was 17,000 with 81% polys. and the Hgb. was 12.2 Gm. A plain film of the abdomen revealed no calcified ring typical of abdominal aneurysm. The blood pressure was 70/50. There were good femoral pulsations, but no pulsations in the feet.

At operation, 3 hours after the onset of symptoms, a large fusiform abdominal aortic aneurysm was found with approximately 500 cc. of blood in the retroperitoneal tissue. There was edema and previous exudation in the area which was suggestive of a previous small leak, probably one week prior to this acute rupture. The aneurysm was resected from just below the renal arteries, including both iliac arteries. Replacement with an Orlon knitted graft was done. Anesthesia was of the general inhalation type. The patient did not do well and did not regain consciousness. The pulse remained rapid, at 140 per min. Hematocrit six hours postoperatively was 42%. He died 9 hours postoperatively.

Autopsy revealed extensive cystic degeneration of both adrenals filled with old blood with thinning of the cortices. There was a leak in the upper posterior aspect of the anastomosis of the graft to the aorta with an aperture of about 1 mm. in diameter. There were approximately 2500 cc. of blood in the retroperitoneal tissues. Both superficial femoral arteries were completely obliterated by old thrombosis.

Comment: It was noted preoperatively that the patient had a brownish pigmentation of the skin thought to be of no significance. However, in view of the postmortem findings of the adrenals, it is felt that this may explain his shock-like state postoperatively and also preoperatively, since there were only about 500 cc. of blood in the retroperitoneal tissues preoperatively. It is felt that this postoperative leakage was the result of a technical error caused by stiffness of the prosthesis, and perhaps would not have occurred if a more pliable substitute had been used. The plastic graft was used in order to save time at the operation.

Results

During the past three years, we have explored nine patients with abdominal aneurysms. While resection was done in only six of our cases five survived the operation (Table 2). Three patients were explored

Table 2
RESULTS OF RESECTED ANEURYSMS

Sex	Age	Site	Condition	Graft	Result
M	58	Abd. Aorta	Ruptured	Homograft	L 21 mo.
M	54	Abd. Aorta	Intact	Nylon	L 19 mo.
M	54	Abd. Aorta	Intact	Orlon	D 10 mo.
M	56	Abd. Aorta	Intact	Homograft	L 1 yr.
		Left Fem.	Intact	Orlon	
M	57	Both Iliacs	Intact	Nylon	L 15 mo.
M	73	Abd. Aorta	Ruptured	Orlon	D 9 hrs.

but no attempt made to resect the aneurysm. One patient, a 70 year old man with a huge aneurysm, was explored and resection was not done when the aneurysm was found to involve the aorta proximal to the renal arteries. His lesion was wrapped with Nylon taffeta and he is well one year later. Second case was that of a 54 year old man, seen in 1953, with a ruptured aneurysm, which was mistakenly diagnosed as an intra-abdominal emergency and exploration was done. Since no graft was readily available no attempt was made to resect the lesion. He died suddenly about 12 hours later before a graft was obtained. The third patient was an 85 year old man who had a huge aneurysm of the abdominal aorta. When he was explored a gangrenous loop of sigmoid colon caused by thrombosis of the inferior mesenteric artery was found. A Mikulicz resection of the colon was done, but he died within the first 24 hours. An autopsy was not obtained.

We had the opportunity to re-operate later upon two of the patients who had a resection. One developed gangrenous appendicitis about six months after a Nylon graft was inserted (Fig. 7, 8). The other developed an incisional hernia about 14 months after a homograft was employed following resection of a ruptured aneurysm. In both these patients the grafts were palpated and found to be soft pliable and pulsating well. Another patient died of a coronary occlusion 10 months after an Orlon knitted graft had been inserted; the graft was found to be open and covered with a thin layer of connective tissue, both inside and outside, infiltrating the interstices of the Orlon. There was excellent healing at the site of suture to the host artery. The only immediate mortality was in Case 7, a 73 year old man, with a ruptured abdominal aortic aneurysm, who died 9 hours postoperatively of adrenal



FIG. 7. (Case 2.) Large abdominal aortic aneurysm. Note penrose drains about iliac arteries at lower end of lesion.



FIG. 8. (Case 2.) Nylon prosthesis replacing aortic aneurysm and bifurcation.

failure and a small leak in the suture line of his graft.

Summary

The development of a satisfactory surgical method of dealing with abdominal aneurysms and the clinical course and necessity for surgical treatment of abdominal aneurysms have been presented. Six patients having abdominal aneurysm had a graft inserted; these have been reviewed. Ruptured aneurysms constitute a dire emergency and all such patients should have the chance offered by surgical intervention.

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*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Annual Meeting Plans Complete

● This issue of the Journal contains the complete program of the 122nd Annual Meeting. Important sessions of the House of Delegates, interesting scientific presentations and outstanding programs of many specialty societies will be presented. Every physician has been mailed a copy of the official program. The annual meeting is always attended by an unusually large number of members when conducted in Middle Tennessee. You will want to attend this one.

President's Night Banquet

● The President's Night Banquet will be conducted on Monday evening, April 8th at the Richland Country Club in Nashville. The Woman's Auxiliary to the Nashville Academy of Medicine is hosting a social hour from 6:00 to 7:00 P.M. preceding the banquet. The President will give his address, the outstanding general practitioner will be presented as well as the winners of the health project contest sponsored by TSMA and the State Woman's Auxiliary.

Guest Speaker a National Figure

● Dr. Clifford E. Barbour, President of the Western Theological Seminary of Pittsburgh, Pennsylvania, will be the guest speaker. His subject will be "Theological Therapeutics." Following this program, Dr. J. Paul Baird, President-Elect will assume office as President. Members of TSMA have received in the mail, a brochure outlining the general activities of the meeting, in which was also contained an envelope requesting those who plan to attend the President's Banquet to make their reservations. It is necessary that we have this information in order to plan for the dinner and to adequately serve those who attend.

Legislative Round-up

● The Legislative Committee and the headquarters staff have been extremely busy in the present session of the Tennessee General Assembly. To date, the Tennessee State Medical Association has been successful in passing measures sponsored by TSMA as well as opposing those that were deemed to be detrimental to the public and physicians.

Model Fireworks Law Passed

● One of the Bills sponsored by TSMA was to put on the statute books a model fireworks law. Considerable research work had been done to determine the number of injuries to Tennesseans as a result of fireworks accidents. A model law was passed on February 14th. However, the law contained an amendment that somewhat hampers its effectiveness. The amendment permits the selling of fireworks for a two-weeks period during Christmas and the Fourth of July. In order to pass the Bill, the amendment had to be accepted. It is felt that by getting the Model Law on the statute books was better than no law at all and further efforts can be made toward removing the amendment.

Other Measures

● Another bill that became law on February 15th was the law regulating the practice of dentistry. This was not one of the bills officially sponsored by TSMA, but the Association cooperated with the Dental Association in getting a proper law in the records. Several other bills are still pending and the Legislative Committee with the staff is putting forth every effort to the end that these measures are presented and passed in the Legislature.

TSMA Guiding Polio Inoculation Program

● A great amount of work has already been done in setting up the program for polio inoculation of all persons to 40 years of age. Plans for a polio inoculation campaign to prevent the illness in all Tennesseans 40 years of age and under were mapped on February 10th when the Association and local medical society representatives, members of the Public Service Committee, Board of Trustees and officers met in Nashville for this purpose. Much progress has already been made and the program will be carried out on a county level, with the county medical societies determining what policy to follow and the method in which the program will be developed.

Regional Meetings

● Members of the Public Service Committee are taking the responsibility of conducting regional meetings for counties surrounding certain areas in the state in order to familiarize at least one representative from every county in Tennessee. It is intended to put this program over on a county level with as much publicity in newspapers, radio and television as possible. Every doctor is urged to keep the vaccine in his office, regardless of his specialty, and urge all of his patients to be inoculated.

Chattanooga-Hamilton County Society Cited For Medical Education Donation

● Three medical schools in Tennessee were \$10,000 richer last month because the generosity of the Chattanooga-Hamilton County Medical Society was matched by the business men of Chattanooga. The American Medical Education Foundation, an organization sponsored by the medical profession for support of the nation's schools, distributed checks amounting to \$31,887.00 to Tennessee schools. Included in these checks was the gift of \$5,000 from the Hamilton County medical society which was matched by \$5,000 from Chattanooga business men. The donors asked the Foundation to give the money to the state medical schools.

In addition, these three schools participated in the general grants program of the American Medical Education Foundation which distributed more than one million dollars to the eighty-three medical schools of the nation.

Tennessee Grants

● Following is a list of Tennessee grants: University of Tennessee College of Medicine—\$10,987.50; Meharry Medical College—\$9,514.50; Vanderbilt University School of Medicine—\$11,385.00.

TSMA Medical Education Committee Chairman Lauded

● Following is the copy of a letter to Dr. Joseph W. Johnson, Jr., of Chattanooga, Chairman of TSMA's Medical Education Committee. "It is with real gratitude that we express our appreciation to the Chattanooga-Hamilton County Medical Society for their generous check for \$4,000 to the American Medical Education Foundation. This is in addition to the \$1,000 previously given and the matching grant of \$5,000.

"Such evidence of the interest and willingness of the medical profession to support medical education by this substantial gift is most encouraging. May you be rewarded by the very wonderful strides that medicine is making today.

"My warmest regards to you and the members of the society." Signed: George F. Lull, M.D., Vice-President.

National Health Insurance

● National health insurance has again been proposed in the United States Congress through the introduction of S.844 by Senator Murray (Democrat—Montana) and H.R. 3764 by Representative Dingle (Democrat—Michigan). Because some sections have since been enacted into law piece meal, the 1957 version is minus these features; education of health personnel, medical research, Hill-Burton expansion, aid to rural and shortage areas, more state grants for health work and grants for maternal and child health. The bill provides a contributory system of health insurance covering the working population similar to social security.

Public Service

THE TENNESSEE TEN

New Public Service Director Appointed

● Mr. Jack Drake of Nashville, former News Director for WLAC-TV, has been appointed Public Service Director for the Tennessee State Medical Association. The appointment was made by the Board of Trustees and recommended by the Public Service Committee. Drake succeeds J. H. Ford, Jr., who resigned February 15th to accept a position with the Public Relations Department of the American Medical Association in Chicago. Drake assumed his new duties on March 1.



Mr. Jack Drake

Experienced in News Reporting and TV

● Mr. Drake, a native of Lincoln, Nebraska, attended college in Arkansas and was graduated from the University of Missouri, receiving his degree in Journalism. He was director of news for radio stations in Oklahoma and Texas prior to becoming associated with WLAC in Nashville. He has been News Director for WLAC Radio and in 1955 became Director of News for WLAC-TV. He is a member of the Television News Directors Association. Drake is married and has one child.

Mass Polio Inoculation Program

● The Public Service Committee of TSMA has been given the responsibility of conducting a campaign through the press and other medium, to encourage all persons in Tennessee in the 1 through 40 years of age group to take the Salk Vaccine inoculations. As the result of a meeting in Chicago called by the AMA in January, state associations throughout the nation were urged to implement the polio program in their areas. Concerted action against polio was urged at the national meeting in Chicago. Representatives from every state and territorial medical association were present, to try to do something about public apathy on Salk Vaccine administration.

Public Apathy

● Less than half of the 108 million Americans in the infant to 39 years age group have received the vaccine. Less than 5 million in the 20-39 age group, where paralysis is severe, have been immunized. One or two injections have been given 45 million young people in the infant to 19 year group but few have had the important third shot.

March 1st Target Date

● A meeting of the Public Service Committee, the Board of Trustees of TSMA, and presidents of all county medical societies was called in Nashville on February 10th to discuss the program. March 1st was the target date established to get the campaign underway. As a result of that meeting, the following conclusions were made.

In view of public apathy with regard to the importance of taking Salk Vaccine in the 1 to 40 age group, it was decided that it should not be considered unethical for physicians in this particular instance to remind their patients of the need for taking the Salk Vaccine, and further to ask them to do so. It was the opinion of the group that the polio program has lagged to such an extent that an active and positive approach to the problem by the physician will be necessary for an effective percentage if the population is to be inoculated in the present drive.

**Every Physician
Should Participate**

● It is recommended that every physician, regardless of his specialty, should keep the vaccine in his office and give it to every person who will agree to be inoculated. This is advised because many patients will ask their doctor to give the vaccine, and if they are referred to another physician, many will not follow through in obtaining the inoculations.

**Who Pays for
The Vaccine**

● The question from every county is "Who will pay for the Vaccine?" Free vaccine is still available for the 1 to 19 age group. However, this is a limited amount that probably will be used up by May, 1957. The particular group that we are trying to reach is the 20 to 40 year olds.

Nominal charges are being made by physicians if patients come to the office for the shots. Where mass inoculations are planned, a charge will be made in order to pay for the vaccine, cost of materials and supplies to render the inoculations. This is being left to the medical societies in the individual counties in order that this can be worked out by the best means in keeping with the conditions in the individual areas.

A letter has gone to the Presidents and Secretaries of each county medical society, asking the society to consider immediately putting the plan into operation.

**Many Programs
Already Underway**

● A number of counties already have their polio programs underway and plans are moving forward for an all out drive to inoculate the population in the 1 to 40 age group.

**Regional Meetings
Planned**

● As further emphasis on this program, the state has been divided into eleven districts, each with one or more Public Service Committee members in charge. Regional meetings will be held in conjunction with officers of the component county societies to plan mass inoculations for every county, under the guidance of a county committee.

**Promotion Packet on
Polio Program
Available**

● The Public Service Committee has prepared a packet of materials to go to the chairmen of each county organization on the polio program. This packet is designed to assist the county chairmen in the important public education campaign. Suggestions and materials are available for newspapers, radio, and other medium. The material includes a press release announcing the county polio committee formation, a suggested editorial for each community newspaper, radio and television spot announcements, and a report on the immunization campaign for use in speeches before mass meetings and announcement for civic clubs and other types of organizations.

Each doctor in every county should take steps to thoroughly organize the mass polio inoculation campaign in order to effectively put this program across to the public.

Additional Promotion Packets may be obtained by contacting the Public Service Office of TSMA.

—J. E. BALLENTINE

Peruninger, Rosamunde M.: Natural History of Aneurysms of the Aorta, Arch. Surg. 69:185, 1954.

11. Crane, Chilton: Arteriosclerotic Aneurysm of the Abdominal Aorta: Some Pathological and Clinical Correlations, New England J. Med. 253: 954, 1955.

12. Pratt-Thomas, H. R.: Aneurysm of the Aorta: An Analysis of 17 Cases, J. South Carolina M.A. 40:251, 1944.

13. Höpfner, E.: Ueber Gefäßnaht, Gefäßstransplantation und Replantation von amputierten Extremitäten. Arch. klin. Chir. 70:417, 1903.

PLACEMENT SERVICE

The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 112 Louise Ave., Nashville 5, Tenn.

Locations Wanted

A 28 year old married physician, Baptist. Graduate Vanderbilt University. Priority IV. Desires general practice with surgery in community 2,000-25,000. Would consider any arrangement. Available now. LW-248

A 31 year old married physician, Unitarian. Graduate the Chicago Medical School. Priority IV. Three years residency in Internal Medicine. Desires clinical, assistant or associate practice in Internal Medicine. Available July, 1957. LW-252

A 29 year old married physician, Protestant. Priority IV. Graduate Syracuse University College of Medicine. Now completing Ob-Gyn. residency. Desires assistant or associate practice in Ob-Gyn. Available July, 1957. LW-253

A 30 year old married physician, Episcopalian. Graduate Medical College of South Carolina. Now completing residency in Internal Medicine. Desires clinic-hospital practice in community 15,000-45,000 in East Tennessee in Internal Medicine. Available July, 1957. LW-254

A 33 year old married physician, Congregation-
alist. Graduate Emory University. Priority IV. Now completing surgical residency. Desires surgical practice. Available July, 1957. LW-255

A 30 year old single physician, Protestant. Graduate University of Louisville. Priority IV. Completing residency in general practice. Desires general practice, clinical or industrial, in community 5,000-50,000. Available August 1, 1957. LW-256

A 31 year old married physician, Church of Christ. Graduate University of Tennessee. Priority IV. Desires private or clinical practice in General surgery in community over 10,000. Available July, 1957. LW-257

A 28 year old married physician, Presbyterian. Graduate of Cornell University. Completing military obligation. Desires general practice in community of 10,000. Available August, 1957. LW-258

A 36 year old married physician, Seventh Day Advent. Graduate College of Medical Evangelists. Priority IV. Desires private or group practice in general surgery. Available April, 1957. LW-259

A 28 year old married physician, Methodist. Graduate Medical College of Virginia. Priority IV. Completing residency in Neuro-psychiatry. Desires clinical assistant or associate general practice. Available December, 1958. LW-260

A 29 year old married physician. Graduate Jefferson Medical School. Desires general practice. Available July, 1957. LW-261

A 26 year old married physician, Methodist. Graduate University of Tennessee. Currently on duty as Naval doctor. Prefers general practice in community of 1,000 or more. Available July, 1957. LW-262

A 37 year old married physician, Methodist. Graduate Vanderbilt University. Priority IV. Desires associate surgery with some general practice. Available now. LW-263

A 29 year old married physician, Methodist. Graduate Vanderbilt University. Priority IV. Currently Resident in Pediatrics. Desires Clinical, assistant or associate practice in Pediatrics in Nashville vicinity. Available July, 1957. LW-264

Physicians Wanted

Small town in West Tennessee desires general practitioner. No other physician in community. All efforts will be made to cooperate with physician in setting up his practice. PW-67

East Tennessee community with trade area of 10,000 desire physician. Housing and all equipment available. Plan to build clinic in near future. PW-69

West Tennessee community desire general practitioner. Population of town 1,000, of trade area, 2,500. No other physician in town, home and office available. PW-74

Town in Middle Tennessee of 700 and trade area of 8,000 has been without medical service for ten years. Desires general practitioner. Have \$10,000 pledged for building of clinic. PW-77

Associate Wanted: Young physician with large general practice and fully equipped clinic in north Georgia desires young associate. New well-staffed Hill-Burton hospital in locality. Married man preferred. Personal interview necessary. Position open for July 1, 1957. PW-83

Town of 3,500 in West Tennessee desires physician for general practice. Clinic and building available, also X-ray. Excellent opportunity in rapidly expanding community. PW-84

Small town with large office and rural practice needs replacement for ailing physician. Office space available. Equipment is for sale or rent. PW-85

A STUDY OF MORTALITY IN CHILDHOOD

JACK CHESNEY, M.D., Knoxville, Tenn.

During the past fifty years there have been many studies of mortality in childhood, and particularly of infant mortality, a term which means the number of deaths per thousand live births during the first year of life. Numerous child-welfare projects, both public and private, have been based upon information which has been derived from such studies.

Mortality studies have been carried out by the Census Bureau, the Children's Bureau, the American Child Health Association, as well as by departments of Pediatrics and Public Health of medical schools.

Many studies of neonatal mortality (i.e., the number of deaths from birth to one month of age) have been made in lying-in hospitals and in the obstetrical departments of medical centers. Efforts have been made to correlate the neonatal death rate with maternal, paternal, and familial factors as well as factors pertaining to the infant itself. The result of such studies can be found in any standard obstetrical textbook or in the current literature.

The death rate in infancy and early childhood was extremely high prior to the twentieth century. This is borne out by medical literature as well as by recorded history. It was a rare family that did not at sometime lose one or more children. Old American cemeteries are all filled with markers raised to infants or children. More than one President of the United States lost a child while in the White House.

The turn of the century was followed by a slow but steady decline in the death rate. It was not, however, until the third decade of the century that a marked decline developed which has continued to the present time. The introduction of evaporated milk for infant feeding, in 1929, led to a rapid decline in deaths from diarrhea. The development of prophylactic immunizations, and the introductions of sulfonamides and antibiotics about the time of World War II led to an unbelievable decline in deaths from infection.

The national infant mortality rate of approximately 200 per 1,000 live births at the

turn of the century is now less than thirty. Deaths among school children who formerly succumbed to epidemics of contagious disease are now at a phenomenally low level.

Present Study

This study covers a group of children in private practice in a city of approximately 150,000 over a period from June, 1946, to December 31, 1955. It does not include miscarriages or the still-born, but does include some newborn who lived only a short time. A small group of the children were under the care of other physicians at the time of death, and a few died in medical centers or in hospitals in other cities. The great majority were followed to the time of death by the writer or his associates.

Autopsy was obtained in a small number of cases. The diagnosis given is the final clinical diagnosis, modified, when necessary by postmortem findings.

The findings in this study as shown in the following six tables and in figure 1.

Table 1

	AGE AT TIME OF DEATH*		
	Total	Male	Female
First Day	58	30	28
Second Day	26	18	8
3rd-31st Day	51	30	21
1-12 Months	43	25	18
1-15 Years	44	22	22
	222	125	97
Total First Month	135		
Total 1-12 Months	43		
Total First Year	178		

*See figure 1.

Table 2

CAUSE OF DEATH ON FIRST DAY*		Total
Prematurity		20
Prematurity with atelectasis		21
Intracranial hemorrhage		5
Erythroblastosis		2
Asphyxia with cerebral anoxia		1
Congenital anomalies		9
Myelomeningocele (2)		
Multiple anomalies (3)		
Mongolism with congenital heart (1)		
Atelectasis, severe (1)		
Congenital Heart Disease (2)		
		58

*30 males, 28 females, 3 autopsies.

Table 3	
CAUSE OF DEATH ON SECOND DAY*	
	Total
Prematurity	5
Prematurity with atelectasis	8
Congenital anomalies	3
Multiple anomalies (1)	
Diaphragmatic hernia (1)	
Myelomeningocele (1)	
Atelectasis congenital	4
(Two had bronchoscopy)	
Atelectasis with congenital heart malformation	1
Erythroblastosis	2
Intracranial injury	3
	26

*18 males, 8 females, no autopsies.

Table 4	
CAUSE OF DEATH THIRD TO THIRTY-FIRST DAY*	
	Total
Prematurity	9
Hemorrhages (2)	
Peritonitis, due to perforated stomach (1)	
Omphalitis (1)	
Intussusception (1)	
Peritonitis, due to impetigo (1)	
No definite cause (3)	
Prematurity with atelectasis	4
Cerebral hemorrhage and cerebral anoxia	5
Tension pneumothorax	1
Anemia of undetermined origin	1
Congenital malformation of the heart	7
Pulmonic stenosis (autopsy) (1)	
Truncus arteriosus with septal defect (autopsy) (1)	
Anomalous drainage of pulmonary veins into superior vena cava (autopsy) (1)	
Agenesis of aortic arch (autopsy) (1)	
Tetralogy of fallot (1)	
Type undetermined (2)	
Infections	5
Pneumonia, bronchial (1)	
Poliomyelitis (at 21 days) (1)	
Meningitis, due to aerobacter (1)	
Diarrhea and dehydration (1)	
Sepsis due to skin infection (1)	
Malnutrition due to inadequate food intake	1
Pulmonary edema with pneumonia	1
Erythroblastosis	2
Jaundice, cause undetermined	2
Congenital anomalies	13
Meconium ileus (1)	
Massive thymoma (1)	
Multiple anomalies (3)	
Mongolism (found dead) (1)	
Omphalocele (1)	
Imperforate anus with rectovesical fistula (1)	
Mongolism with intestinal atresia (1)	
Atresia of duodenum (1)	
Tracheo-esophageal fistula (2)	
Myelomeningocele (1)	
	51

*30 males, 21 females, 14 autopsies.

Table 5	
CAUSE OF DEATH—ONE TO TWELVE MONTHS*	
	Total
Prematurity	5
Diarrhea (3)	
Peritonitis and obstruction (1)	
Atelectasis and pneumonia (1)	
Automobile accident: (Struck head against heater)	1
Infections	10
Meningitis and meningococemia (6)	
Pertussis (1)	
Bronchopneumonia (2)	
Peritonitis, secondary to omphalitis (1)	
Diarrhea and dehydration	6
Subdural hematoma	1
Adrenal neuroblastoma with hemorrhage	1
Cyanosis, cause undetermined	1
Anemia and malnutrition	1
Malnutrition (found dead in bed)	2
Malformation	15
Myelomeningocele and hydrocephalus (5)	
Congenital malformation of heart (6)	
Biliary atresia (1)	
Epidermolysis bullosa hereditaria (1)	
Bronchogenic cyst right lung (1)	
Amyotonia congenital (1)	
	43

*25 males, 18 females, 6 autopsies.

Table 6	
CAUSE OF DEATH—ONE TO FIFTEEN YEARS*	
	Total
Traumatic	6
Automobile accidents (2)	
Asphyxia (piece of apple peel) (1)	
Drowning (1)	
Struck on head by golf ball (1)	
Rupture of spleen due to fall (1)	
Leukemia	8
Other malignances	5
Brain tumor (3)	
Teratoma of sacrococcygeal area (2)	
Congenital anomalies	13
Mongolism (3)	
Cerebral agenesis (4)	
Renal anomaly (1)	
Cystic fibrosis of pancreas (3)	
Congenital biliary atresia (1)	
Enterogenous cyst (1)	
Rheumatic fever	3
Nephritis and nephrosis	2
Poliomyelitis, bulbar	3
Tuberculosis	1
Atelectasis and pulmonary embolus	1
Acute respiratory infection with asphyxia	1
Status epilepticus	1
	44

*22 males, 22 females, 9 autopsies.

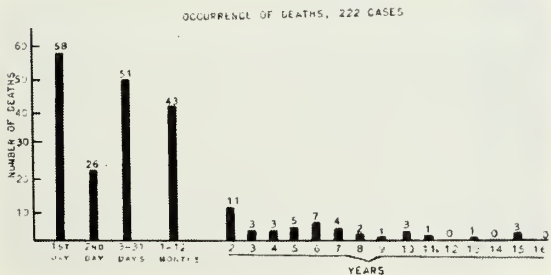


FIG. 1.

Summary and Conclusions

1. A study of mortality in nine and one-half years of private practice is reviewed.
 2. Total deaths were 222 of which 126 were male and 97 were female.
 3. One hundred and thirty-five deaths (60 per cent of the total) occurred in the first month. One hundred and seventy-eight deaths (80 per cent of the total) occurred in the first year.
 4. In the first month half of the deaths were due to prematurity or to complications of prematurity.
 5. In the first month 21 per cent were due to congenital malformations. Accordingly, almost three-fourths of the neonatal deaths were due to prematurity or to malformations.
 6. Deaths in premature children after 48 hours were usually due to infection.
 7. Approximately one-fourth of the neonatal deaths due to anomalies might have been prevented by earlier diagnosis and surgical treatment.
 8. After the first year the incidence of death in American children is extremely low.
 9. Deaths beyond the first year were largely due to trauma, to leukemia and malignancy, and to congenital anomalies.
 10. Modern methods of treatment are prolonging the lives of many children with anomalies so that they live into later childhood rather than succumb in infancy.
 11. An extremely small number of deaths was due to diarrhea or to enteric infection.
 12. Deaths due to specific contagious disease, other than poliomyelitis, were limited to one tiny infant with pertussis and to a teen-age spastic idiot with measles.
 13. Entirely missing are such entities which were once important causes of death in childhood: typhoid fever, scarlet fever, diphtheria, tetanus, osteomyelitis, mastoiditis, appendicitis, lobar pneumonia, empyema thoracis, congenital syphilis, and miliary tuberculosis. This is due to: (a) the use of modern antibiotic therapy; (b) the use of preventive measures to modify or to prevent contagion; and (c) the decline in the virulence of certain diseases.
 14. Since one-fourth of early deaths are due to anomalies, efforts should be made to prevent anomalies by further study of genetic, infectious, and nutritional factors during pregnancy.
 15. Further decline of deaths in the early weeks will depend upon methods to prevent premature birth and to treat infants whose pulmonary tree does not expand properly.
 16. Further decline in deaths beyond the first year will depend upon the development of better accident control, upon specific treatment of leukemia and malignancy, and upon preventive treatment for rheumatic fever and poliomyelitis. The latter may be near at hand.
 17. The greatest factors in bringing about a continuous reduction of deaths are: (a) improvement of nutrition in infants; (b) the use of specific immunizing agents; (c) the modern treatment of infections; and, (d) the rapid development of modern surgical diagnosis and treatment.
- The above factors have been carried almost to the limit and further decrease will depend upon the development of new methods of prophylaxis and treatment which we do not have at present.

SURGICAL MANAGEMENT OF NODULAR GOITER

G. TURNER HOWARD, JR., M.D., Knoxville, Tenn.

When the Knoxville Academy of Medicine was founded 100 years ago, the first removal of a goiter in America had already been done some 22 years previously by Nathan R. Smith of Maryland, in 1835. The history of the treatment of thyroid disease is a long one and filled with names of some of the world's greatest surgeons. Abdul Casem Khalaf Eben Abbas is credited with the first thyroidectomy which was performed, in the latter part of the tenth century in Bagdad. Desault, Hedenus, Dupuytren, followed by Cooper, Kocker, Mikulicz, Billroth, and Halsted led a great parade of surgeons who contributed to this field.¹

For centuries iodine in some form has been used in patients with goiter, even in ancient China. Simpson has stated that the stems of seaweed were chewed by South Americans for centuries in the treatment of goiter. It was not until 1812 that Courtois isolated iodine from seaweed. The introduction of Lugol's solution for the treatment of hyperthyroidism by Plummer,² in 1923, revolutionized the treatment of goiter the world over and made surgery much safer. Advances in anesthesia and the introduction of thiouracil, in 1943, by Astwood³ followed by propylthiouracil and other allied compounds complete important milestones in the treatment of goiter.

The nodular goiter is becoming an increasingly more important problem to the medical profession, particularly in view of the higher percentage of malignancy in this type of lesion as reported in the literature.⁴ This is especially true of the glands with solitary nontoxic nodules which have been shown to represent cancer in 33.3 per cent of a recent series from the Lahey Clinic.⁵ Solitary nodules are reported to be even more dangerous in children. Some other authors have reported a smaller percentage of malignancy in these lesions, Cole⁶ of Chicago reporting 24.4 per cent and Judd⁷ of the Mayo Clinic 10 per cent. Nevertheless, there is ample proof that cancer lurks as a potent possibility in every nontoxic solitary nodule in the thyroid, even in those barely palpable, and they should all be removed

without exception if the patient's condition will allow it.

The Solitary Adenoma

There are reasons for operation on the solitary or discrete nodule in the thyroid other than the possibility of malignancy. Pressure on the trachea and important structures of the neck is a frequent symptom sometimes causing considerable dyspnea.

Hyperthyroidism may be present from the beginning or may develop later forcing the surgeon to offer definitive therapy in the form of surgery, even though the percentage of malignancy in toxic adenomas is only 1 per cent.⁸ It is well known that toxic adenomas do not respond well to continuing medical management. When operation is done for the toxic adenoma, subtotal thyroidectomy is the procedure of choice. Most of these patients will have hyperactive gland tissue surrounding the nodule, although in a small percentage the tumor will be composed of hyperactive tissue while the surrounding thyroid is somewhat atrophic from pressure. Of course, all such patients must be prepared properly for operation and must be brought into the euthyroid state by adequate medication. Although we use the antithyroid drugs routinely for primary hyperthyroidism, we prefer Lugol's solution for toxic adenomas when possible, particularly if the B.M.R. is below +40 per cent. This is done because the question of some carcinogenic action in the thiourea compounds has been raised.⁹ Adequate sedation, rest, and diet are prescribed in addition to Lugol's solution.

Since the possibility of malignancy is the most important indication for removing the solitary nontoxic nodule from the thyroid, we are in agreement with Colcock¹⁰ that the tumor should be removed with an ample margin of apparently normal tissue surrounding it. If cancer is suspected from the gross appearance, adherence, or rapid growth, a total lobectomy with removal of the isthmus and adjacent portion of the opposite lobe should be done. We prefer intratracheal anesthesia with the head extended by a sand bag under the shoulders.

We have seldom found it necessary to cut across the strap muscles for adequate exposure, but do not hesitate to do it if the gland is very large.

Substernal or Intrathoracic Goiter

The goiter that slips below the sternum into the chest, or that has its blood supply and primary growth in the mediastinum can be dangerous from the standpoint of pressure on vital structures. Pressure on, and compression of the trachea is almost uniform. Falor¹¹ classifies these goiters into two main groups according to their blood supply. Group 1 includes those deriving their blood supply from inside the chest, and Group 2 those with the blood supply derived from the neck and apparently having started in the neck and gradually migrated or pressed into the chest from above. This group of course constitutes the great majority of the cases. Falor subdivides each group according to whether the tumor appears in the anterior or posterior position, knowledge which is essential before operation is attempted. This is determined by a lateral roentgenogram of the chest. Those tumors having their origin and blood supply in the neck can most always be removed through the usual thyroidectomy incision. Some of these may grow so large in their chest compartment in the superior mediastinum that they have outgrown the passageway and must be removed by morcellation, as described by Lahey.¹³ In most of these we have found surprisingly little bleeding but usually place some gelfoam soaked in thrombin in the cavity and drain the area well. Those intrathoracic goiters which have their origin in the chest must be removed through the chest and the surgical approach is dictated by their position and other factors.

The following patient illustrates the large intrathoracic goiter with its origin and blood supply in the neck. (Fig. 1.)

M. N., a 63 year old, white widowed housewife was seen in my office on July 20, 1956, complaining of shortness of breath, cough and nervousness of about eight months' duration. There was no loss of weight but some intolerance to heat; she had to sleep with her head propped up on several pillows. She stated she had had a goiter "all her life." Frequent headaches had been present for several years.

Positive findings on physical examination

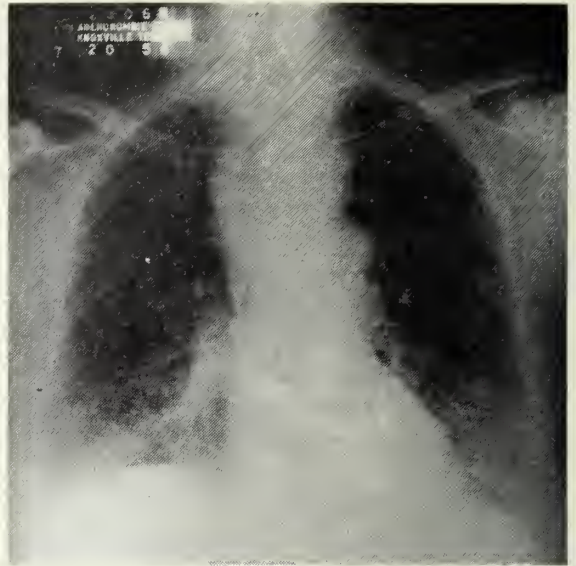


FIG. 1. M. N. Preoperative P. A. chest roentgenogram showing intrathoracic goiter extending into superior mediastinum.

showed an obese woman, with T. 98.6, P. 80, and B. P. 150/90, the urinalysis was negative, red blood count 4.18 million, hemoglobin 12.8 Gm., and white blood count 14,350 with a normal differential. The neck showed a large bilateral adenomatous goiter, but the lower limit of the goiter could not be outlined by palpation. The neck veins were distended and the face was flushed. The heart and lungs were not remarkable. The B.M.R. was +56 per cent with a blood cholesterol of 140 mg. per 100 cc. Roentgenograms showed a large intrathoracic component to the goiter extending into the posterior portion of the superior mediastinum displacing the trachea forward. (Figs. 1 and 2.)



FIG. 2. Preoperative lateral roentgenogram showing large intrathoracic goiter displacing trachea forward.

She was prepared with Lugol's solution minims x t.i.d. and phenobarbital one-half grain q.i.d. On August 15, the B.M.R. was +15 per cent and the cholesterol was 150 mg. per 100 cc.

The patient was admitted to Fort Sanders Presbyterian Hospital and was operated upon on August 31. Preparations for thoracotomy were made in case the tumor could not be removed successfully through the neck. Under intratracheal anesthesia a routine transverse collar incision was made in the neck, the thyroid exposed and strap muscles retracted on the right. The upper pole was ligated extracapsularly and the lateral veins ligated with the line of resection marked with clamps on the lateral surface. The isthmus was transected and the right lobe, measuring 7 cm. by 5 cm., was removed above Crile clamps, leaving a thin shell of tissue on the posterior wall. The left lobe was treated in a like manner leaving the stalk into the chest intact. By traction and clamping small vessels in the capsule, the intrathoracic portion was gradually delivered through the neck, the left lobe and intrathoracic portion measuring 16 cm. by 8 cm. (Fig. 3.) Some



FIG. 3. Resected specimen. All of the lower portion was substernal and intrathoracic.

gelfoam wetted with thrombin solution was placed in the cavity in the mediastinum and a cigarette drain was placed deep in the remaining dead space. The neck was closed in a routine manner using clips to the skin.

The patient was discharged on the seventh postoperative day. On November 5, 1956 a chest film showed no fluid or infiltration and the return of the mediastinal shadow to normal. (Fig. 4.)

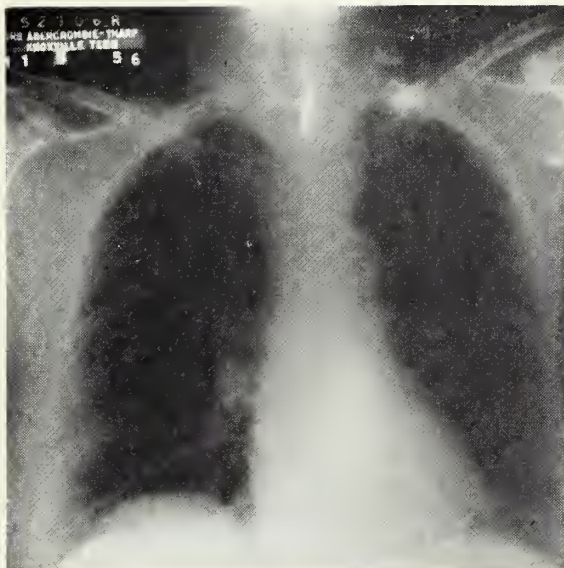


FIG. 4: M. N. Postoperative P. A. roentgenogram showing normal findings.

Multiple Adenomatous Goiter

The incidence of carcinoma in multinodular goiters is considerably less than that in the single nodules. However, the development of hyperthyroidism is much more frequently associated with multiple adenomas, particularly in the older age group. These patients are also more likely to have intrathoracic extension of the goiter, and if the lower border of the gland cannot be definitely palpated above the clavicle and sternum, anteroposterior and lateral roentgenograms of the chest should be made. Nodes palpable lateral to the thyroid should be considered metastases from thyroid cancer until proven otherwise. A subtotal thyroidectomy is usually indicated in patients with multiple adenomas. If one is in doubt about cancer on one side, examination of a frozen section will sometimes be of help. If carcinoma is found on one side, a total hemithyroidectomy and removal of the isthmus must be done. If involved nodes are present, a radical neck dissection on that side is the treatment of choice. If no nodes are involved, we have felt that hemithyroidectomy followed by radiation therapy is indicated. If nodes develop later a radical neck dissection may be done at that time.

Analysis of 100 Consecutive Thyroidectomies

An analysis of 100 consecutive thyroidectomies was made primarily to determine the incidence of carcinoma in all types goiter,

and particularly in nontoxic solitary tumors occurring in a general surgical practice. (Table 1.) It was also thought of interest

Table 1

SUMMARY OF 100 CONSECUTIVE THYROID LESIONS			
Type of Lesion	Number of Cases	Per-cent	Percent of Malignancy in Solitary Nontoxic Nodules
Solitary Nontoxic			
Adenomas	60	60%	
Benign	54		
Malignant	6		10%
Primary Hyperthyroidism	8	8%	
Multiple Nontoxic			
Adenomas	18	18%	
Toxic Adenomas	11	11%	
Hashimoto's Disease	2	2%	
Riedel's Struma	1	1%	
	100	100%	

to determine the incidence of Grave's disease as related to nodular goiters, as well as of Riedel's struma and Hashimoto's disease. In this series of cases operated upon personally and going back to 1954, there was no mortality, no tetany and no paralysis of the recurrent nerve, proving that, by and large, thyroidectomy should be a relatively safe and satisfactory operation.

It will be noted that in our series 10 percent of the solitary nodular tumors were malignant, which is less than one-third of the percentage reported from the Lahey Clinic but the same as that encountered at the Mayo Clinic. We are at a loss to explain the difference in these percentages and wonder if geographic location may be a factor. No carcinomas were found in the toxic adenomas, multinodular goiters or cases of diffuse hyperthyroidism.

Summary

The nodular goiter has been a problem physicians have struggled with for centuries. However, recent knowledge has given the problem relatively more importance. The high incidence of carcinoma in nontoxic solitary adenomas makes it in-

creasingly more important that these tumors be removed. Although the incidence of carcinoma is not as high in the multinodular goiters, toxicity and intrathoracic extension is more prevalent, making surgical attack the treatment of choice for these as well.

The case of a large intrathoracic goiter removed through the usual cervical incision is reported.

One hundred consecutive thyroidectomies were reviewed showing an over-all incidence of carcinoma of 6 percent. All of the carcinomas in this series occurred in the solitary nontoxic nodular goiters, showing an incidence of 10 percent of malignancy in this group. No mortality, injury of the recurrent laryngeal nerve or tetany occurred in this series.

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CLINICOPATHOLOGIC CONFERENCE

University of Tennessee Memorial Research Center and Hospital*

Primary Carcinoma of Liver

Case Presentation

This 71 year old office worker entered the hospital because of abdominal distention and anorexia of about 4 weeks duration. The patient had been entirely well until recent weeks, but there had been a weight loss of 20 lbs. in the past few months. A physical examination five years prior to admission was said to have revealed the presence of an enlarged liver. The patient had been active and had worked regularly. No hemorrhoids had been noted, nor hematemesis, abdominal pain, nor nausea or vomiting. The patient stated that he drank alcohol only occasionally. There had never been jaundice. He had been taking an unknown amount of Terramycin and vitamin pills. Bowel movements had been frequent and a slate colored stool had been noted one week prior to admission but the color had again become normal.

He had had the usual childhood diseases. Five years prior to admission he had had a transurethral resection of the prostate.

His father had died in an accident and his mother had died of causes unknown. The patient had lived most of his life in the southern portion of the United States, and in recent years was a native of Knoxville, Tennessee.

Physical examination revealed a very poorly nourished, elderly man with a moderately distended abdomen. The liver was palpable three fingerbreadths below the right costal margin and was palpable beneath the left costal margin. The liver was nodular and firm. There was a ballotable mass in the left flank which was thought to be a spleen. A fluid wave was present.

Pupils were small and equal and were relatively fixed. A fundoscopic examination was unsuccessful. Mouth and pharynx were normal. Neck was normal and the trachea was in the midline. Lungs were clear to percussion and auscultation. There was normal sinus rhythm. A grade III, apical blowing systolic murmur and a grade III aortic systolic murmur were present and radiated into the neck. The extremities were thin; good dorsalis pedis and femoral pulses were palpable. There was 2+ pretibial edema. Deep tendon reflexes were 2+ in both lower extremities. T. 98, R. 16, P. 80, B.P. 140/80.

The hematocrit on admission was 42, the white blood count 15,000, 93% of which were segmented cells and 7% lymphocytes. Urinalysis showed a specific gravity of 1.015, reaction 5.5, sugar was

negative, and there were 2-4 RBC. Urine was negative for urobilinogen on two occasions. The alkaline phosphatase was 19 Bodansky units, icteric index was 15 units. Total protein 7.75 Gm. with 3.35 Gm. of albumin. The 10 minute direct fraction of the Van Den Bergh was 1.55 mg., the 30 minute direct fraction 1.80 mg., and the total bilirubin was 2.45 mg./100 ml. Acid phosphatase was 2.3 Bodansky units. A BSP test showed 25.8% dye retained in 45 minutes. Cephalin-cholesterol flocculation test was 3+ in 24 hours. On the fourth hospital day a paracentesis was done, the fluid containing 1.35 Gm./100 ml. of protein; a cell block preparation was negative for malignant cells. A chest X-ray film and upper G. I. Series were normal.

The patient was given Mercuhydrin, with milk of magnesia, and on the eleventh hospital day was started on ammonium chloride, 12 cc. of a 10% solution t.i.d.

A laparotomy on the fifteenth hospital day revealed the liver to be enlarged and knobby with large regenerating nodules. The gallbladder was somewhat thickened but no stones were felt. The peritoneal surfaces showed no evidence of neoplasm; the portal venous pressure was 19 cm. of water. A biopsy of the liver was taken, and the abdomen closed.

Following operation the patient did well. Temperature remained normal. On the second postoperative day a prothrombin time was 15 sec. and control 11 sec. On the third postoperative day a tarry stool was noted and the hematocrit, which had been 41 two days before operation, was found to be 32. The following day the patient began to vomit black material. The abdomen remained soft and the pulse regular. On the fifth postoperative day the hematocrit was 29 and blood transfusions were begun. On the morning of the sixth postoperative day the pulse was 104, the blood pressure 86/60, the hematocrit 27, and the patient vomited bright red blood. On the ninth postoperative day an N.P.N. was 110, and creatinine 2.25 mg./100 ml. Six blood transfusions failed to raise the hematocrit level and tarry stools continued. The patient expired on the tenth postoperative day.

Discussion

DR. C. HARWELL DABBS: Though I am sure everyone has read this, it is customary for the discussor to review the protocol.

This is the case of a 71 year old office worker who entered the hospital because of abdominal distention and anorexia of about four weeks duration. He had been well until recent weeks, though there had been a weight loss of 20 lbs. in the past few months. I presume he meant that he felt well although he had lost weight.

Physical examination five years prior to

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admission was said to have revealed the presence of an enlarged liver but we have no way of knowing whether this liver was simply palpable and he was told that it was so, or whether it was greatly enlarged. Presumably it was not greatly enlarged or he would have been under treatment of some kind or investigation. He had been active and had worked regularly. He had neither hemorrhoids, hematemesis, abdominal pain, nor nausea or vomiting. He drank alcohol only occasionally. To my mind a number of very serious omissions occur in this protocol. If you heard Dr. Hurst at the Heart Meeting recently, you may recall the remark he made about communication; this is extremely appropos. You recall, in discussing a history, he pointed out that one of the most important things with which we have to deal is communication, and that frequently the patient has no idea what you mean and you have no idea what the patient means. This is true in almost any field of human endeavor. No matter how carefully you write a protocol you frequently do not put down exactly what you mean. In a CPC we have to go entirely by what is written. So it says he drank alcohol only occasionally. We have no idea whether he drank large amounts of alcohol or small amounts on those occasions. We have no idea what form of alcohol he drank, which may be quite important. For example, if he occasionally drank large amounts of "moonshine" whiskey, he is a candidate for post-necrotic cirrhosis which we will discuss later. There had never been jaundice. He had been taking an unknown amount of Terramycin and vitamin pills.

Bowel movements had been frequent and slate colored stools had been noted one week before admission. "Slate-color" is used frequently. This blackboard here is slate, so must I presume the patient had a black stool? Since the patient was jaundiced on admission, I wonder if the person who wrote this down had really meant a large clay colored stool. I think clay color is an extremely poor term. For example, in Mississippi where I grew up, when we spoke of clay color we meant a red color. I think it is well to ask the patient not if he had a "clay colored" or "slate colored" stool, because many persons think of clay as being

red, but whether or not the stool is colorless, white or grey looking.

Five years prior to admission he had had a transurethral resection of the prostate. Nothing was said about the findings. To simplify our discussion we will presume that no carcinoma was found.

The next paragraph again contains some statements which bear consideration. The patient had lived most of his life in the southern portion of the United States and in recent years was a native of Knoxville, Tennessee. This did not say that he had lived in the United States all his life and most of his life in the southern portion of the United States. Again, for the purpose of the discussion and so we will not get into a discussion of schistosomiasis, I'll assume that he probably lived in the United States all his life and most of it in the southern portion, although it does not say that.

Physical examination revealed a poorly nourished elderly man with a moderately distended abdomen. The liver was palpable below the costal margins, being enlarged both to left and right. It was nodular and firm, though tenderness was not mentioned. A mass in the left flank was felt to be spleen, and we assume it was. There was a fluid wave. The head and its structures were normal, as was the neck. The trachea was in the midline and the lungs were clear. A Grade III, apical, blowing systolic murmur and a Grade III aortic systolic murmur were present, the latter radiating into the neck. Except for 2+ pretibial edema the extremities were negative. The vital signs were normal.

The white count of 15,000 with 93 per cent segmented cells suggests a septic process somewhere. Urinalysis was not remarkable though albumin was not mentioned. The urobilinogen was negative on two occasions. It doesn't make sense that this patient's stools were normal in color; he should have had urobilinogen in his urine. The alkaline phosphatase was 19 Bodansky units, which is certainly elevated, as was the icteric index of 15. With a serum protein of 7.5, of which 3.35 grams was albumin, by subtraction then the globulin was 4.15 grams hence a reversal of the A/G ratio. With the 10 minute direct fraction of the Van Den Bergh 1.55, 30 minute 1.8 and the total bilirubin

was 2.45, there is moderate elevation; the normal total should be no more than 1.0, a normal 10 minute level would be about 0.2. Acid phosphatase was normal. A BSP retention at 45 minutes was high, indicating impaired liver function, or impaired blood flow in the liver. A CC flocculation was 3+ in 24 hours, again abnormal and indicative of parenchymal damage. No mention is made of the amount of fluid removed at paracentesis. At any rate a cell block preparation was negative for malignant cells.

X-ray studies were negative. I see nothing abnormal in these films. No mention is made of examination of the lower esophagus but I presume that it was carefully examined in doing the G. I. series. No mention is made of what was specifically looked for; there is no widening of the duodenal loop, nor "inverted three" sign to lead one to suspect carcinoma of the ampulla or the head of the pancreas.

DR. FRANCIS S. JONES: I would like to interrupt for just a moment with information that might be helpful. These X-ray films were all taken prior to admission to the hospital.

DR. DABBS: I see. So we do not have the fluoroscopic report.

The patient was given Mercuhydrin, milk of magnesia, and later was started on ammonium chloride. With your permission, I would like to ask some of the internists for a comment about ammonium chloride. To me this case so far shrieks the diagnosis of cirrhosis of the liver, and ammonium chloride is supposed to be given with trepidation in cirrhosis because of the danger of ammonia intoxication. I presume it was given to potentiate the action of the mercurial diuretics, though perhaps there may be some other reason of which I am not aware.

At operation the liver was found to be enlarged and knobby with large regenerating nodules. From this description one may suspect that the nodules seen grossly represented regeneration of liver tissue, though I believe this diagnosis in the end rests on the microscopic appearance. I think it is actually impossible to look at the surface of the liver and tell if there is regenerating liver tissue underneath. However, this implies the surgeon thought it was a cirrhotic

liver because he used the term regenerating. The gallbladder was somewhat thickened but no stones were found and I presume none had seriously been suspected. No mention was made of a survey film of the abdomen or a cholecystogram in the past, and I see no stones in the region of the gallbladder on the films of the G. I. series. Peritoneal surfaces showed no evidence of neoplasm. The portal venous pressure was 19 cm. of water, presumably saline; we have no idea what the peripheral venous pressure was; presumably it was normal since no distention of neck veins was noted, again a presumption. If the peripheral venous pressure was normal, this represents a moderate elevation of the portal venous pressure, which should be about the same as the peripheral venous pressure.

An aside is appropriate at this point. If the patient bled postoperatively, and I think he bled from esophageal varices, this is somewhat on the low side for a portal venous pressure in a patient who bleeds from varices. In most studies, the portal pressure in patients bleeding from esophageal varices is 24 to 25 cm. of saline. I would like to point out again, parenthetically, that this is a tricky pressure to measure inside the abdomen because one can easily kink one of the omental veins if one is measuring from that or the mesenteric veins. It has to be done very carefully. Here again, since the portal venous pressure was measured, we presume that the operator, had made a diagnosis of either cirrhosis or extrahepatic portal obstruction by this time. A biopsy of the liver was taken, which I think would have been taken better by needle prior to the laparotomy. No short-circuiting procedure of any sort or decompression of the biliary system was done, so we presume that no block was found.

Following operation the patient did well, a somewhat strange statement in view of the fact that the patient died! Presumably he did well for the first day, or perhaps two days. The temperature remained normal. On the second postoperative day a tarry stool was noted and the hematocrit which had been 41 two days prior to operation was found to be 32; the following day the patient began to vomit black material. The abdomen remained soft and pulse regular. On

the fifth postoperative day the hematocrit was 29 and blood transfusions were begun. On the following day the pulse was 104, B.P. 86/60 and hematocrit 27. He vomited bright red blood. On the ninth postoperative day the NPN was elevated to 110, the creatinine remaining essentially normal. Six blood transfusions failed to raise the hematocrit level and tarry stools continued. Death occurred on the tenth postoperative day. Nothing is mentioned about the state of consciousness of the patient. We presume, since nothing is said, that he did not go into coma. The presumption is, and it is entirely a presumption, that he died of hemorrhagic shock although we have no information about the pulse rate or level of blood pressure.

Now, to start the ball rolling, I would like to ask Dr. Kennedy to comment for a moment about the cardiac aspects of this case. Here, in brief, we have a 71 year old man who comes in with abdominal complaints and who has laboratory evidence pointing toward parenchymal liver disease with some evidence of obstruction, though we do not know whether it is intrahepatic or extrahepatic obstruction; it could be either one. The laparotomy presumably was for suspected obstructive jaundice. It was known that he had ascites and it was not known whether or not he had esophageal varices, but postoperatively he bled massively and died. The ascites and edema I presume were thought to be due to liver disease. But, in the protocol various murmurs were described. Dr. Kennedy, would you mind commenting briefly on the description of the murmurs and whether you think this patient had decompensation with edema on the basis of his heart disease?

DR. GLEN KENNEDY: From the description of the murmurs given in this protocol, I would have to conclude, if they were really at least Grade III murmurs, that they are probably not what we call functional murmurs.

DR. DABBS: He had a Grade III, apical, systolic murmur. If that's not functional then it indicates. . . .

DR. KENNEDY: Mitral valve disease probably. One can get apical murmurs transmitted from the aortic area, too. Since he does have the same murmur or at least

have a systolic murmur at the base, too, we can consider that possibility also.

DR. DABBS: In this patient we had a description of some peripheral edema, and ascites which can be the earliest signs of right sided congestive failure. Ascites can precede peripheral edema. We have no description or mention of venous blood pressure. The liver was felt to be nodular and later at laparotomy was shown to be nodular which does not occur in congestive failure as a usual thing. The X-ray film of the chest seems normal to me. I feel there is little, if anything, in these films which would suggest serious organic heart disease. I guess we will have to judge that this man's heart disease, or whatever it was did not play a clinically significant role either in his illness or demise. Does anyone want to challenge that assumption before we go on? We have already mentioned that various other things should have been done. We feel, at least I feel, that electrocardiogram, cardiac fluoroscopy and peripheral venous pressure and circulation time should have been done.

DR. FRANK LONDON: I think the venous pressure is the real ringer in the whole situation.

DR. DABBS: Portal venous pressure?

DR. LONDON: Right. I do not believe ascites develops from heart failure or from any form of venous obstruction with a portal venous pressure of this level (190 mm. saline).

DR. DABBS: Yes, the usual portal venous pressure in patients bleeding from varices is variously given as 25 at least or 30 but, as I mentioned, it is a tricky thing to measure at laparotomy. Certainly he had ascites, at least fluid was obtained when he was tapped, but it is not stated how much ascites he had at laparotomy. Does anyone seriously object to excluding cardiac decompensation as the cause of this man's edema and ascites before we go on for purposes of discussion? As far as his gastrointestinal studies are concerned, we have already mentioned that the laboratory data is confusing. Dr. John Avera, this man had a negative urobilinogen on two occasions and yet it was stated that his stools were normal in color. Can you make these two things jibe? If there was no urine

urobilinogen, should he not have had completely acholic stools?

DR. JOHN AVERA: I would expect so. I think we have to assume a laboratory error.

DR. DABBS: Well, I assume that we would just have to throw that out. It did not make sense.

DR. LONDON: He took a lot of Terramycin, didn't he?

DR. DABBS: What is the significance of that?

DR. LONDON: The formation of urobilinogen takes place in the intestine and bacteria are necessary for the formation of urobilinogen.

DR. DABBS: That's right. Being a surgeon I completely overlooked that fine point. I think that is very significant. That may very well be the explanation. The rest of the laboratory data is compatible with obstructive jaundice and with liver damage as well, as we have already pointed out. But because of the relatively low values of the tests that indicate obstruction and the very best of evidence of parenchymal disease, I am most suspicious that this patient's primary problem was parenchymal liver damage.

At this point I would have been inclined to do one more laboratory test, a punch biopsy of the liver. This certainly might have helped. If the lesion was either metastatic carcinoma or primary hepatoma it might have been diagnostic. If per chance this was pigmentation cirrhosis such as hemochromatosis, which I do not think it was, it might have been diagnostic. And even as far as differentiating extrahepatic and intrahepatic obstruction on the basis of parenchymal disease it might have been very helpful. It is always hard to tell from the printed page what one would have done without seeing the patient, but I am sure I would have done that before laparotomy. Another thing omitted in the laboratory data but which may have been on the chart is the examination of stools for blood. This patient had a "slate colored" stool. No mention is made of whether the stools were tested for blood or not. Serum amylase, serum lipase and fasting blood sugar, I think would have been in order.

Aside from the assumption that this patient was explored because of the possibil-

ity of obstructive jaundice, I can think of only one other conceivable reason for the exploration. If the diagnosis of cirrhosis had been made preoperatively, the laparotomy may have been done either to do some procedure for relief of ascites, which does not seem reasonable because the ascites apparently had not been much of a problem, or to do a shunting procedure because of esophageal varices, which is unreasonable because the patient had not bled at that time, unless his "slate colored" stool represented bleeding. And, furthermore, we had no evidence preoperatively that he had esophageal varices. So I assume that the operation was done because it was felt the patient had obstructive jaundice. Does anyone else have any comment on this?

DR. LONDON: I do not see any reason from the data presented here for operating on this patient.

DR. DABBS: Well, can you think of any reason why he was explored other than that he was presumed to have obstructive jaundice?

DR. LONDON: I do not think there is any evidence that he had obstructive jaundice.

DR. DABBS: We will assume he was explored because he had obstructive jaundice. Now, as far as obstructive jaundice is concerned there is nothing to suggest that he was obstructed due to stones. We will just keep this informal and anyone can challenge these statements at any time. As to other causes of obstructive jaundice, the next that comes to mind is carcinoma of the head of the pancreas. Many things against this, and one is the absence of pain. Contrary to popular opinion, 85-90% of patients who come to the hospital with carcinoma of the head of the pancreas have pain. This liver was nodular and firm. In carcinoma of the pancreas the liver is enlarged, but the edge is usually sharp even for many, many weeks. The absence of positive X-ray findings, of course, is not conclusive. Still, it seems to me that carcinoma of the head of the pancreas can be excluded. We really do not have a very good case for it. Primary carcinoma of the bile duct and carcinoma of the ampulla of Vater we will lump together, because either often may produce obstructive jaundice without pain in contradistinction to carcinoma of the head of

the pancreas. The other things which we have cited again would lead me to suspect that this patient had primary liver disease rather than extrahepatic obstruction. So, without appearing to be too critical, I would agree with Dr. London but would not be quite so vehement about it because I did not see the patient. Judging from the protocol I am somewhat puzzled as to why this patient was explored, particularly without having many other things done to him.

I assume then that this patient had parenchymal liver disease and furthermore that he had cirrhosis. There are many types of cirrhosis and this is entirely out of my province, but statistically Laennec's cirrhosis would be most likely. Common things happen commonly. The incidence of cirrhosis in autopsy series in this country is 2 to 3 per cent, so just on a statistical basis this patient had a good chance of having Laennec's cirrhosis.

Though he denied a history of alcoholism in the usual sense, it certainly does not rule it out. The enlarged liver five years before fits into this picture since if he had Laennec's cirrhosis this may have represented the hepatitic stage.

Hemochromatosis of the liver is mentioned for completeness. Nothing is mentioned about the patient's skin being bronzed. We have no result on a fasting blood sugar, no evidence of diabetes, and have no punch biopsy of the liver, so I will just have to exclude that. Wilson's disease should be mentioned but I will lump Wilson's disease and syphilitic cirrhosis together because the patient had small fixed pupils. No other neurologic abnormalities are described. In the first place, Wilson's disease or hepatolenticular degeneration occurs usually in young people, and this was a 71 year old man. Such patients usually have characteristic neurologic manifestations with a hand waving type of tremor and I think we can exclude that. As for syphilitic cirrhosis, we have no mention of a serologic test for syphilis. The presence of syphilis in patients with Laennec's cirrhosis is quite common, something like 20 per cent, but most feel this is simply a coincidence. True syphilitic cirrhosis, if it exists at all, is rare. We have nothing to suggest this except possibly the description

of the liver at operation in which large regenerative nodules are described, but since these were not described as a few isolated nodules, I think gumma can be excluded. Biliary cirrhosis of the obstructive type is ruled out by the findings at laparotomy; presumably there was no evidence of obstruction since nothing was done about it. The parasitic cirrroses, caused by liver or blood flukes, can be ruled out, since we have already assumed this patient lived in the United States all of his life.

This brings us to post-necrotic cirrhosis which is not very common, comprising 5 to 10 per cent of all cases of cirrhosis. Frequently, the cause of post-necrotic cirrhosis is not known. We recently had a case of a 21 year old boy who had a history of "drinking occasionally." Unfortunately, he died following laparotomy performed because of upper gastrointestinal bleeding. He died in hepatic coma, and at autopsy he had post-necrotic cirrhosis. Going back into his history, although he drank occasionally, when he drank, he drank "moonshine" whiskey in moderately large amounts for two or three days at a time.

I believe this patient under discussion today had cirrhosis and died from bleeding esophageal varices, and just to get my neck out on the chopping block I will assume he had post-necrotic cirrhosis. Since this is a CPC there must be something unusual about it. There always is. I think he also had valvular heart disease with mitral stenosis which was insignificant as far as the outcome of the case was concerned. Well, in finest CPC style I have tried to relate all of the diagnoses to one disease entity. I think there are many rare things that could be mentioned as the cause of gastrointestinal bleeding, such as aneurysm of the hepatic artery which was recently reported, but things like that would not explain the liver picture.

Does anyone else have a diagnosis?

DR. GLEN KENNEDY: I haven't any other diagnosis, but I would like to discuss briefly the bleeding from esophageal varices, the history of his tarry stools and his vomiting black blood, and finally the vomiting of bright blood after surgery. I do not know whether it is always true, but in my experience the bleeding from esophageal

varices first consists of vomiting bright blood and then tarry stools are noted later. This is the sequence rather than having tarry stools only and then 3 or 4 days later vomiting bright red blood.

DR. DABBS: Well, I do not recall that from the literature but my own experience, I am happy to say, is limited. I believe it can occur either way.

DR. LONDON: Assuming this patient was known to have cirrhosis with esophageal varices, don't you think a portocaval shunt should have been considered?

DR. DABBS: Well, I am not at all sure it is the prevailing opinion of the surgical group here. Some have come to feel that the medical people have justifiably criticized surgeons in the past for doing portocaval shunts on patients who have a good prognosis anyway. Some surgical groups, notably the one at Cornell I believe, have started doing emergency portocaval shunts on people who are bleeding acutely.

DR. LONDON: But this patient was not bleeding acutely.

DR. DABBS: Yes, I know he wasn't. The thing is that even if he had been bleeding most people wouldn't have done it because there is very little precedent for such. There is only a series of nine so far. The only thing is that almost everybody, all the surgeons anyway, have agreed that you should not do this on patients who have not bled. There is no concrete evidence that portocaval shunt helps ascites.

DR. LONDON: Eisenmenger and Nickel* have recently, and I believe justly, challenged this concept. While a shunt procedure will not prevent the sick cirrhotic from retaining sodium and water, it will, if successful prevent the selective sequestration of this fluid as ascites. Assuming surgery was not indicated, if such a patient was explored, for whatever reason, and the portal venous pressure was high, you would be tempted to go ahead then with a shunt, wouldn't you?

DR. DABBS: One would be tempted but I don't think many surgeons would do it.

It is still in the stage of clinical experimentation.

Anatomic Diagnoses

1. Portal cirrhosis of liver.
2. Primary liver cell carcinoma, with metastases to gastrohepatic lymph nodes and invasion of portal and hepatic veins.
3. Ascites (400 cc.).
4. Esophageal varices with rupture, and massive gastro-intestinal hemorrhage.
5. Pulmonary edema, bilateral, moderate degree.
6. Aspiration of gastric contents, slight.

Accessory Diagnoses

1. Pyelonephritis, chronic, bilateral.
2. Adenocarcinoma of prostate.
3. Papillary adenoma of kidney, small.

DR. FRANCIS S. JONES: This is one of the most fascinating cases we have had at this hospital since it opened. There were many interesting findings. To begin with, on opening the peritoneal cavity, there was 400 cc. of thin clear fluid, but the small bowel was of a dark color and was found, on being opened, to contain dark to bright red blood in large amounts throughout its length. The stomach contained 200 Gm. of dark red blood clot. The heart was essentially normal. No valvular lesions were present. The lungs were slightly increased in weight due to a mild pulmonary edema. The trachea and bronchi also contained small amounts of dirty, red material which was similar to that which was present in the stomach. The liver was the remarkable feature of the case (Fig. 1). It weighed 2,450 Gm. and was coarsely nodular; many of the nodules were bright yellow to yellow brown. Some nodules measured as much as 2.0 cm. in diameter and some that were

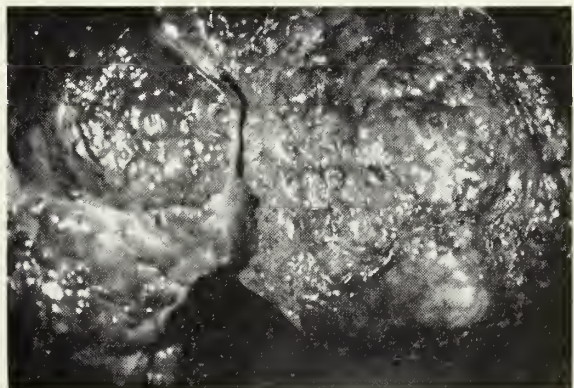


FIG. 1.

*Eisenmenger, W. J. & Nickel, W. F.: Relation of Portal Hypertension to Ascites in Laennec's Cirrhosis, *Am. J. Med.* 20:879, 1956.

on the serosal surface were almost pedunculated. The left lobe contained fewer nodules but presented the appearance of portal cirrhosis between tumor foci (Fig. 2).



FIG. 2.

Microscopically the lesion was a primary liver cell carcinoma, but in addition there were many large areas of necrosis of the liver parenchyma. The portal vein was distended and completely filled with tumor, which could be seen projecting into the hepatic veins. In the gastrohepatic ligament there was one lymph node which contained metastatic tumor. There was a narrow opening into one of several esophageal varices (Fig. 3) which was just above the esophagogastric junction. Also there was an adenocarcinoma of the prostate.

I am inclined to think there must be some correlation between the very rapid progression of the illness after operation and the extensive involvement of the portal vein by carcinoma.

DR. DABBS: I just want to say in my defense that I forgot to mention carcinoma of the liver but I had it down on my list. I



FIG. 3.

think the chances of getting a positive needle biopsy would have been excellent.

DR. JONES: I would like to make one other brief comment. I am not at all sure that one should consider primary liver cell carcinoma as an end stage of cirrhosis. The association of cirrhosis and primary liver cell carcinoma is, of course, very striking. However, that does not mean that one is a result of the other. They both may be the result of the action of certain similar factors. The varying incidence in certain geographic areas as well as the dietary and nutritional factors involved in the production of these tumors is most interesting.

Presidents' Letters

The Knoxville Academy of Medicine brings greetings to the Tennessee State Medical Association, and extends an invitation to all members to attend any or all of our Centennial functions. The special events scheduled for 1957 are: A Centennial reception, March 20, University of Tennessee Student Center, a one day scientific meeting at Deane Hill Country Club, May 21, and a dinner dance in the fall of 1957.

On March 20, 1857, five physicians of Knoxville organized the Knox County Medical Society. The year of 1957 being the centennial anniversary of organized medicine in Knoxville, the Knoxville Academy of Medicine has seen fit to celebrate this occasion and pay homage to these Founding Fathers.

During this 100 years, the physicians of Knoxville have rendered medical service to this community. In World War I, 49 members were in the service of our country, and in World War II, 68 members were in the armed forces, three of whom made the supreme sacrifice. During World War II the active members purchased a building and for the first time the Academy had a

permanent home and library. This beautiful building was dedicated to the members who had active duty in the service during World War II.

Knoxville has about 1,100 hospital beds, and will soon have an additional 300 beds. Our Library has 7,700 volumes, receives 75 current medical journals, and renders full library service.

The Academy has 272 members and 24 active committees. These committees not only function within the Academy but attempt to aid in health and related problems in this area, with liaison committees to labor, the Bar Association and hospitals, in addition to special health, public service, and Civilian Defense committees. The Knoxville Academy of Medicine rededicates itself not only to continue to render medical services to this community, but to take part in community projects, to be citizens of the first order, and to aid in every possible way to make Knoxville and this area a better, happier, and healthier place to live.

J. Gilbert Eblen M.D.



DR. WOOD

the A. M. A. only 10 years of age and meeting in Nashville—The University of Nashville 6 years of age but enrolling over 450 students, attending 2 sessions of 4 months each.

Twenty-three years later Knoxville was to welcome the State Meeting for the first time, and to present the first woman phy-

A hundred years ago in Medicine! A very short time, when thought of in comparison with the age of medicine, but a long time when compared to the achievements of medicine. Then a license to practice unknown—

sician in Tennessee. And 31 years later was apparently first to offer diversion from the hardy task of medical papers by providing "an extract from the fruit of the vine" at the insane asylum.

So with one hundred years of cooperative effort, of growth and progress serving to unite the medical organization, we dedicate this page to the continuing determination of our profession for the pursuit of knowledge and skill in improving health and prolonging the lives of all people. We salute the Knoxville Academy of Medicine on its hundredth anniversary.

R. B. Wood M.D.

THE JOURNAL

OF THE
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Address organizational matters to Jack E. Ballentine,
Executive Secretary, 112 Louise Avenue, Nashville 5,
Tenn.

R. H. KAMPMEIER, M.D., Editor and Secretary
Vanderbilt University Hospital, Nashville

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MARCH, 1957

Program

CENTENNIAL CELEBRATION

KNOXVILLE ACADEMY OF MEDICINE

Wednesday, March 20, 1957

8:00 P.M.

The Place of Meeting

UNIVERSITY OF TENNESSEE STUDENT CENTER

Knoxville 100 Years Ago

MISS MARY ROTHROCK, KNOXVILLE, TENN.

A Century of Medical Progress

R. H. KAMPMEIER, M.D., NASHVILLE, TENN.

Reception

A CENTURY OF MEDICINE

A hundred years is a short time in the panorama of the World's history, and even in the more limited horizon of medicine. Yet, when narrowed down to a community and to those living in it a century is a long time since it is longer than the span of life. Certainly the hundred year mark for an organization permits its members to pause and look back upon its growth and progress, and likewise permits it to look forward to the future.

Surely, as one learns of the development of the Knoxville Academy of Medicine one understands the pride its membership takes in the organization. To have been organized in frontier days, survived the vicissitudes of war, and then to have grown steadily with its community to own its home and to play an important role in the city and surrounding area is surely a course to view with pride. So too the members of the Academy have demonstrated over the years that they at no time lagged behind the forward movement of medical science and progress. And down to the present moment the profession of Knoxville has been and is self-sufficient, in terms of a "medical center." To have such an atmosphere of professional progress and competency unfortunately does not fall to the lot of every city of equal size. And the citizens of Knoxville probably do not appreciate how fortunate they are in having a medical society which has fostered such an atmosphere, for they are the ones who have profited immeasurably.

With this historical background, the doctors of the Knoxville Academy of Medicine can now turn to face a new century with confidence, for the foundation has been well built for continued growth.

The medical profession of Tennessee congratulates the Knoxville Academy of Medicine on its glorious past and its certain brilliant future. This special issue of the JOURNAL acknowledges the passage of time, but its contents indicate that the Academy membership will always provide for the people of Knoxville the adequate care that is modern medicine.

R. H. K.

Special Section

SCIENTIFIC PROGRAM OF THE 122ND ANNUAL MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

Sunday, April 7, 1957

1:00 P.M.

House of Delegates, Colonial Ballroom
Maxwell House



SPECIALTY SOCIETIES

TENNESSEE SOCIETY OF ANESTHESIOLOGY

SUNDAY, APRIL 7, 1957

Old South Room

Maxwell House

10:30 A.M.

Business Meeting

12:30 P.M.

Luncheon

2:00 P.M.

Scientific Program

Methods of Ventilation During Anesthesia
BENJAMIN ETSTEN, M.D.

Director, Dept. of Anesthesia,
New England Center Hospital, Boston, Mass.

WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

APRIL 7, 8, 9, 10, 1957

Convention Headquarters
Hermitage Hotel
Registration

Lobby (South End) Hermitage Hotel

Program

SUNDAY, APRIL 7

2:00 P.M. Finance and Budget Committee Meeting
President's Suite

3:30 P.M. Revisions Committee Meeting
President's Suite

4:30 P.M. Awards Committee Meeting
President's Suite

Hostess Auxiliary

The Woman's Auxiliary to the Davidson County
Medical Society

Mrs. Robert M. Foote, President



Monday, April 8, 1957

General Scientific Meeting Program

Colonial Ballroom

Maxwell House

RAE B. GIBSON, M.D., Greeneville, Vice-President,
TSMA Presiding

9:00 A.M. **Bronchogenic Carcinoma**
(Sound Movie in Color)

9:25 A.M. **Intestinal Obstruction**

By: DR. GEORGE E. DUNCAN, Nashville
Discussed by: DR. CHARLES C. TRABUE,
IV, Nashville

9:50 A.M. **The Annual Physical Examination**

By: DR. ROBERT A. DAVISON, Memphis
Discussed by: DR. OGLE JONES, Cen-
terville

10:15 A.M. **Visit Exhibits**

10:45 A.M. **Cholecystectomy: Present Indications
and Techniques**

By: DR. E. H. STORER, Memphis
Discussed by: DR. B. O. GARNER,
Union City

11:10 A.M. **SYMPOSIUM—Thrombo-embolic Dis-
ease and Its Management**

DR. LAMB B. MYHR, Jackson, Modera-
tor

DR. DOUGLAS RIDDELL, Nashville

DR. BRUCE R. McCAMPBELL, Memphis

DR. JOHN S. POWERS, JR., Kingsport

DR. C. D. HAWKES, Memphis

SPECIALTY SOCIETIES

TENNESSEE ACADEMY OF GENERAL PRACTICE

MONDAY, APRIL 8, 1957

Old South Room

Maxwell House

SCIENTIFIC PROGRAM

2:00 P.M.

Medical Aspects of Atomic Civil Defense

—C. W. SHILLING, M.D.

Medical Dept., Atomic Energy Commission,
Washington, D. C.

General Aspects of Atomic Civil Defense

—COL. ROBERT FOX

Director of Civil Defense
State of Tennessee

Business Meeting and Election of Officers—to fol-
low the Scientific Session

TENNESSEE DIABETES ASSOCIATION

MONDAY, APRIL 8, 1957

Parlor A & B

Maxwell House

SCIENTIFIC PROGRAM

1:00 P.M.

Luncheon:

Scientific Program

The Adrenal and Carbohydrate Metabolism

Guest Speaker: GRANT W. LIDDLE, M.D., Assoc.
Prof. of Med., Vanderbilt School
of Medicine, Nashville

Afternoon Program

Hypoglycemia—C. A. ROSENBERG, M.D., Memphis
Discussed by FRED GOLDNER, JR., M.D., Nash-
ville

Glycosuria and Hyperglycemia in Pregnancy and
Post-partum, JEAN M. HAWKES, M.D., Memphis
Discussed by RALPH MASSIE, M.D., Nashville

Oral Hypoglycemic Agents—RICHARD L. WOOTEN,
M.D., Memphis
Discussed by O. Morse Kochtitzky, M.D.,
Nashville

Clinical Pathological Conference

RICHARD C. SEXTON, JR., M.D., Knoxville
JOHN W. ADAMS, JR., M.D., Chattanooga

TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

MONDAY, APRIL 8, 1957

Assembly Room

Noel Hotel

HERBERT DUNCAN, M.D., President
J. THOMAS BRYAN, M.D., Secretary

SCIENTIFIC PROGRAM

1:45 P.M.

Meeting called to order

DR. DUNCAN

2:00 P.M.

Case Report of Restoration of Hearing in A Child
age 12, by Stapes Mobilization

HERMAN G. LAVELLE, M.D., Memphis

2:45 P.M.

Kodochrome Slides of Vascular Changes in Diabetic Retinitis

ROLAND MYERS, M.D., Memphis

3:15 P.M.

Case Report of Epidermoid Tumors of the Orbit

CARROLL SMITH, M.D., Nashville

3:50 P.M.

A Case Report of Tetanus from Acute Mastoiditis

HERBERT DUNCAN, M.D., Nashville

4:15 P.M.

Business Meeting

6:00 P.M.

Social Hour

Richland Country Club

7:00 P.M.

Annual President's Dinner

Richland Country Club

TENNESSEE RADIOLOGICAL SOCIETY

MONDAY, APRIL 8, 1957

Parlor C

Noel Hotel

Nashville

BEN R. MAYES, M.D., Nashville, President
W. E. SCRIBNER, M.D., Kingsport, Vice-President
GEORGE K. HENSHALL, M.D., Chattanooga,
Secretary-Treasurer

12:30 P.M.

Luncheon and Business meeting

2:00 P.M.

Scientific Session (Open)

Collagen Diseases—GEORGE COOPER, JR., M.D., Associate Professor of Roentgenology, University of Virginia School of Medicine, Charlottesville, Virginia

3:00 P.M.

Film Reading (Diagnostic Panel)

This panel will expertly diagnose films of proven cases to be submitted by members or guests. Cases to be submitted for diagnosis should be meritorious by virtue of their peculiar nature and supported by films of good diagnostic quality.

TENNESSEE CHAPTER AMERICAN COLLEGE OF SURGEONS

MONDAY, APRIL 8, 1957

Vanderbilt University Hospital

Program presented by the Department of Surgery,

College of Medicine, Vanderbilt University Hospital, Nashville.

1:30 P.M.

Experiences with Cardiac Arrest

LAWRENCE G. SCHULL, M.D.

Surgical Management of Massive Unexplained Bleeding from the Upper Gastro-Intestinal Tract

JAMES A. KIRTLEY, JR., M.D.

DOUGLAS H. RIDDELL, M.D.

Clinical Experiences with Pheochromocytoma

EDWARD H. LANCE, M.D.

The Extension of Endometrial Biopsy as a Substitute for Curettage

JOHN C. BURCH, M.D.

Experiences with Frozen Dried Arterial Homografts in 100 Consecutive Patients

JOHN FOSTER, M.D.

Metachronous Primary Carcinomas of the Colon

ROBERT I. CARLSON, M.D.

B. F. BYRD, JR., M.D.

Experimental Production of Ether Convulsions

GUY OWENS, M.D.

ROYCE DAWSON, M.D.

Surgical Implications of Pericholangitic Hepatitis

J. LYNWOOD HERRINGTON, M.D.

An Immunologic Approach to the Treatment of Cancer

JAMES T. GRACE, M.D.

FRANK GOLLAN, M.D.

Treatment of Duodenal Ulcer by Vagotomy and Resection of the Gastric Antrum

L. W. EDWARDS, M.D.

Dumping Syndrome: A Clinical and Experimental Study

MICHAEL G. WEIDNER, M.D.

Surgical Considerations in Rheumatic Heart Disease

WALTER DIVELEY, M.D.

5:00 P.M.

Council Meeting

TENNESSEE PSYCHIATRIC ASSOCIATION

MONDAY, APRIL 8, 1957

Parlor C-2

Maxwell House

12:30 P.M.

Luncheon

1:30 P.M.

Scientific Session:

Panel Discussion

"Concerning the Practice of Psychiatry—
This I Believe"

—CARROL C. TURNER, M.D., Memphis
JOSEPH W. JOHNSON, JR., M.D., Chattanooga
FRANK LUTON, M.D., Nashville
JESSE HILL, M.D., Knoxville

Business Session

Adjournment

TENNESSEE STATE PEDIATRIC SOCIETY

MONDAY, APRIL 8, 1957

Tennessee Conference on Handicapped Children

Sponsored by

**Tennessee Pediatric Society and
The Nemours Foundation**

Coordinated by the Junior League of Nashville

9:00 A.M.

Registration—War Memorial Auditorium

Choice of the Following Events:

1. Individual organizational meetings (Official and unofficial agencies).
2. Tour of local facilities concerned with handicapping conditions of childhood (Cloverbottom, Junior League and Council Convalescent Homes, Speech and Hearing Foundation, Buena Vista Cerebral Palsy Preschool Class, Mental Health Center, Vanderbilt Department of Physical Therapy, Vanderbilt Polio-myelitis and Rehabilitation Center).
3. Viewing of Exhibits.

10:30 A.M.

Tennessee Chapter, American Academy of Pediatrics—Dining Room, Mid-State Baptist Hospital (Luncheon Meeting)

War Memorial Building

1:00 P.M.

Presiding, Afternoon Session

T. FORT BRIDGES, M.D.

President, Tennessee Pediatric Society

Moderator, Afternoon Session

AMOS CHRISTIE, M.D.

Invocation

Address and Welcome—GOVERNOR FRANK CLEMENT

Introduction and Greetings

A. R. SHANDS, JR., M.D.

Medical Director, Nemours Foundation

Keynote Address: Medical Education and the Handicapped

GROVER POWERS, M.D.

Professor Emeritus of Pediatrics, Yale University

Realistic Goals for the Cerebral Palsied Patient

MARGARET JONES, M.D.

Assoc. Professor of Pediatrics

University of California at Los Angeles

Community Program for Crippled Children

JOHN BARTRAM, M.D.

Assoc. Professor of Pediatrics, Temple University

Intermission

Recent Developments in Services for Crippled Children

ARTHUR J. LESSER, M.D.

Director Division of Health Services

U. S. Children's Bureau

6:00 P.M.

Social Hour

7:00 P.M.

President's Night Banquet, Richland Country Club

Conference Banquet, Hermitage Hotel

**TENNESSEE SOCIETY OF
PATHOLOGISTS**

MONDAY, APRIL 8, 1957

Parlor C-1

Maxwell House

12:30 P.M.

Luncheon

1:30 P.M.

Business Meeting

2:30 P.M.

SCIENTIFIC PROGRAM

Panel Discussion: Pathology in the University and in the Hospital

Moderator—CHESTER K. JONES, M.D., Jackson

**WOMAN'S AUXILIARY
TO
TENNESSEE STATE MEDICAL
ASSOCIATION**

Registration—Main Lobby—8:00 A.M.

APRIL 8, 9, 10, 1957

Hotel Hermitage

Program

MONDAY, APRIL 8, 1957

9:30 A.M.

Pre-convention Board Breakfast and Meeting

Louisiana Room, Hermitage Hotel

1:00 P.M.-3:00 P.M.

Tour Travelers Rest

4:00 P.M.-6:00 P.M.

Open House, New Tennessee State Medical Association, Headquarters Building, 112 Louise Ave.

6:00 P.M.

Social Hour, Richland Country Club. Sponsored by Davidson County Auxiliary

7:00 P.M.

President's Banquet, Tennessee State Medical Association. Auxiliary members cordially invited.



Tuesday, April 9, 1957

9:00 A.M.

**House of Delegates, Old South Room
Maxwell House**

**General Scientific Meeting
Program**

Colonial Ballroom

Maxwell House

JOHN C. THORNTON, JR., M.D., Brownsville,

Vice-President, TSMA, Presiding

9:00 A.M.

Hysterectomy—A Fifteen Year Survey at St. Joseph's Hospital

By: DR. HAROLD FEINSTEIN, Memphis

Discussed by: DR. JOHN C. BURCH, Nashville

9:25 A.M.

Everyday Problems in Plastic Surgery

By: DR. McCARTY DEMERE, Memphis

Discussed by: DR. HOWARD B. BARNWELL, Chattanooga

9:50 A.M.

The Management of Heart Disease in Pregnancy

By: DR. FRANK LONDON, Knoxville

Discussed by: DR. DAVID STRAYHORN, Nashville

10:15 A.M.

Visit Exhibits

10:45 A.M.

Management of Upper Gastro-intestinal Bleeding

By: DR. TIM J. MANSON, Chattanooga

Discussed by: DR. WILLIAM J. CARD, Nashville

11:10 A.M.

Symposium—Backache*

DR. WILLIAM K. OWEN, Pulaski, Moderator
 DR. M. FRANK TURNEY, Knoxville
 DR. EUGENE M. REGEN, Nashville
 DR. LOUIS P. BRITT, JR., Memphis
 DR. ROBERT C. ROBERTSON, Chattanooga

*(A movie on this topic will be shown at
 2:30 P.M., Tuesday, April 9)

SPECIALTY SOCIETIES

**TENNESSEE CHAPTER
 AMERICAN COLLEGE OF SURGEONS**

TUESDAY, APRIL 9, 1957

1:30 P.M.

Colonial Ballroom**Maxwell House**

1:30 P.M.

Paper by an Intern or Resident

1:50 P.M.

Carcinoma of Gall Bladder

CARROL LONG, M.D., Johnson City

2:10 P.M.

Injuries to the Chest

HUGHES CHANDLER, M.D., Jackson

2:30 P.M.

Flexion Exercises in the Treatment of Low Lumbar Mechanical Disorders (Sound Movie, 36 Minutes)

E. M. REGEN, M.D., Nashville

J. WILLIAM HILLMAN, M.D., Nashville

3:10 P.M.

Panel Discussion, "Surgical Problems of the Colon"

Moderator—EDWARD T. NEWELL, JR., M.D.,
 Chattanooga

Panelists—GENE H. KISTLER, M.D., Chattanooga

A. MERTEN BAKER, JR., M.D., Chattanooga

CECIL E. NEWELL, M.D., Chattanooga

GEORGE G. YOUNG, M.D., Chattanooga

Question and Answer Period

4:30-5:00 P.M.

Business Session

6:30 P.M.

Social Hour, Colonial Ballroom

7:30 P.M.

Banquet, Colonial Ballroom

Presiding—DAVID H. WATERMAN, M.D., President,
 Tennessee Chapter, American College of Surgeons

Guest Speaker—MR. RAY H. JENKINS, Knoxville,
 Tennessee

Presentation of Gavel to DR. DAVID H. WATERMAN,
 Retiring President

TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

TUESDAY, APRIL 9, 1957**Assembly Room, Noel Hotel**

12:30 P.M.

Luncheon, Assembly Room, Noel Hotel, Courtesy of Nashville Academy.

SCIENTIFIC PROGRAM

1:45 P.M.

Society called to Order

1:50 P.M.

Reconstruction of the Nasal Septum, Goldman Technique

SAM SANDERS, M.D., Memphis, Tennessee

2:25 P.M.

Three Case Reports of Monocular Internal Ophthalmoplegia

ALICE B. DEUTSCH, M.D., Memphis, Tennessee

2:50 P.M.

A Case Report of Posterior Sympathetic Ophthalmia

WALTER BENEDICT, M.D., Knoxville, Tennessee

3:20 P.M.

A Case Report of Heterochromia of Iridies

WILLIAM F. MURRAH, M.D., Memphis, Tennessee

3:50 P.M.

A Case Report of Spasm of the Near Reflex of the Eyes

YOUSUF HUSOIN, M.D., Memphis, Tennessee

TENNESSEE THORACIC SOCIETY**TUESDAY, APRIL 9, 1957****Parlor B****Noel Hotel****Luncheon 12-1 P.M.****Business Meeting 1 P.M.****Scientific Program:****1. Homograft Replacement of Aortic Arch.**

JAMES PATE, M.D., and FELIX HUGHES, M.D.,
 Memphis, Tennessee

2. Problems with Lye Burns of Esophagus.

WILLIAM K. ROGERS, M.D., Knoxville, Tennessee

3. Treatment of Tuberculosis in Children

WILLIAM G. WHITE, M.D., Memphis, Tennessee

4. Pulmonary Histoplasmosis with Cavitation.

W. W. HUBBARD, M.D., Nashville, Tennessee

5. The Indication and Use of Pre-resection and Post-resection Thoracoplasties in Tuberculosis

ROBERT W. NEWMAN, M.D., Knoxville, Tennessee

6. Experience with the Use of Pyrazinamide for Excisional Therapy in Poor Risk Tuberculous Patient

SAM STEPHENSON, M.D., Nashville, Tennessee

A short film will be shown during the meeting on operation for Pectus Excavatum.

By: ROLLIN A. DANIEL, JR., M.D., Nashville, Tennessee

TENNESSEE ACADEMY OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

Parlor A and B**Maxwell House****TUESDAY, APRIL 9, 1957**

12:15 P.M.

Luncheon:

Members and Guests

2:00 P.M.

PAUL M. GOLLEY, M.D., President, Chattanooga, Presiding

Scientific Session:

Open to all members of the Tennessee State Medical Association

Speaker:

PHILIPP C. SOTTONG, M.D., Director, The Guidance Clinic, Chattanooga, Tennessee

Subject:

The "Tranquilizing" Drugs and Their Public Health Implications

A business meeting will be conducted following luncheon.

TENNESSEE ACADEMY OF GENERAL PRACTICE

TUESDAY, APRIL 9, 1957

6:30 P.M.

Social Hour

Assembly Room, Noel Hotel

7:30 P.M.

Annual Banquet (Members and their wives)

Ballroom—Noel Hotel

Guest Speaker:

J. S. DE TAR, M.D., Milan, Michigan, President, American Academy of General Practice

Subject:

The Future of General Practice

Installation of Officers**Adjournment**

WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

TUESDAY, APRIL 9, 1957

Hermitage Hotel

7:30-8:45 A.M.

Breakfast Honoring Past State Presidents

MRS. ELMER T. PEARSON, Presiding
Louisiana Room, Hermitage Hotel
Auxiliary members and guests cordially invited

TWENTY-NINTH ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

(See Page 134 For Complete Program)

TENNESSEE STATE PEDIATRIC SOCIETY

TUESDAY, APRIL 9, 1957

War Memorial Building Auditorium

Medical and Paramedical Groups

Moderator—RANDOLPH BATSON, M.D.

9:00 A.M.

Invocation**Tennessee State Program for the Care of Handicapped Children**

ALBERT G. RANDALL, M.D., Associate Director, Maternal and Child Health Services

Series of Panel Discussions**Orthopedically Handicapped**

(Place to be determined)

WILLIAM HILLMAN, M.D., Associate Professor, Orthopedic Surgery, Vanderbilt University

Emotionally Handicapped

(Place to be determined)

JAMES CRECRAFT, M.D., Director, Mental Health Center, Tennessee

Mental Retardation

(Place to be determined)

LLOYD DUNN, M.D., Coordinator of Special Education, Peabody College

Epilepsy and other Neurological Disturbances

(Place to be determined)

AMOS CHRISTIE, M.D., Professor of Pediatrics, Vanderbilt University

Cerebral Palsy

(Place to be determined)

A. J. INGRAM, M.D., Orthopedic Surgeon, Memphis, Tennessee

Congenital Deformities

(Place to be determined)

GEORGE HOLCOMB, M.D., Instructor in Clinical Surgery, Vanderbilt University, Nashville

12:00 Noon

Nemours Conference Luncheon—Andrew Jackson Hotel

12:00 Noon

Lunch and Business Meeting

Tennessee State Pediatric Society—Vanderbilt Hospital

1:30 P.M.

Scientific Session of Tennessee Pediatric Society Amphitheatre, Vanderbilt University Hospital

Case Presentation of the most interesting cases from the Ward

DR. CHRISTIE AND STAFF

Pseudohypertrophic Muscular Dystrophy—**Case Report and Review of Vanderbilt Studies**

MR. GERALD STONE

Pediatric Rehabilitation—Case Presentation and Demonstration of Multi-Disciplinary Approach

DR. RANDOLPH BATSON and
DR. HARRIS D. RILEY, JR.

Congenital Dislocation of Hip—Movie, Early Diagnosis and Treatment

DR. WILLIAM HILLMAN

Cerebral Palsy—Case Presentation with Discussion by:

DR. MARGARET JONES

5:00 P.M.

Summary—(War Memorial Auditorium)

DR. A. R. SHANDS, JR.



Wednesday, April 10, 1957

General Scientific Meeting Program

Colonial Ballroom

Maxwell House

KENNETH L. HAILE, M.D. Cookeville,
Vice-President, TSMA, Presiding

9:00 A.M.

Retroperitoneal Tumors in Childhood

By: DR. GEORGE W. HOLCOMB, JR., Nashville
 Discussed by: DR. CHARLES R. ZIRKLE, Knoxville

9:25 A.M.

Obstetrical Emergencies

By: DR. PERRY J. WILLIAMSON, Knoxville
 Discussed by: DR. ROY DOUGLASS, JR., Jackson

9:50 A.M.

Cobalt Bomb Teletherapy

By: DR. JOHN H. BEVERIDGE, Nashville
 Discussed by: DR. GRANVILLE W. HUDSON, Nashville

10:15 A.M.

VISIT EXHIBITS

10:45 A.M.

Factors Contributing to Early Coronary Disease

By: DR. DANIEL A. BRODY, Memphis
 Discussed by: DR. FRED GOLDNER, Nashville

11:10 A.M.

PANEL DISCUSSION—Extravagances, Waste and Misuse of the Clinical Laboratory

DR. DAVID P. MCCALLIE, Chattanooga, Moderator
 DR. L. W. DIGGS, Memphis
 DR. GEORGE S. MAHON, Knoxville
 DR. FRANK C. WOMACK, JR., Nashville

SPECIALTY SOCIETIES**TENNESSEE MEDICAL FOUNDATION**

WEDNESDAY, APRIL 10, 1957

Old South Room

Maxwell House

8:00 A.M.

Breakfast (Dutch)

8:45 A.M.

Old South Room

Maxwell House

Membership Business Meeting

Election of Board of Directors and Officers

**WOMAN'S AUXILIARY TO THE
TENNESSEE STATE MEDICAL
ASSOCIATION**

WEDNESDAY, APRIL 10, 1957

Hermitage Hotel

9:30 A.M.

POST-CONVENTION BOARD MEETING

Louisiana Room, Hermitage Hotel

MRS. JOSEPH D. ANDERSON, President, Presiding

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**DETAILED PROGRAM
FOR**

TUESDAY, APRIL 9, 1957

9:00 A.M.

Iris Room, Hermitage Hotel
 MRS. ELMER T. PEARSON, President, Presiding

Invocation

DR. RICHARD N. OWEN, Editor Baptist and
 Reflector

Pledge of Loyalty

MRS. R. L. BRICKELL

Greetings from

DR. R. B. WOOD, President
 Tennessee State Medical Association

Address of Welcome

MRS. ROBERT M. FOOTE, President
 Davidson County Medical Auxiliary

Response

MRS. FRED MARSH

Introduction of Convention Chairman

MRS. CHARLES C. TRABUE, IV

Announcements**Introduction of Advisory Council**

DR. ROY A. DOUGLASS, Chairman

Introduction of Guests of Honor

MRS. ROBERT FLANDERS, President, Woman's
 Auxiliary to A.M.A.
 MRS. O. W. ROBINSON, President, Woman's
 Auxiliary to Southern Medical Association
 MRS. R. B. WOOD, wife of retiring president,
 TSMA
 MRS. J. PAUL BAIRD, wife of President-elect,
 TSMA
 State Winner of Health Project Contest
 Members-at-large of Woman's Auxiliary, TSMA

Presentation of the President-Elect

MRS. JOSEPH D. ANDERSON

Presentation of Directors**In Memoriam**

MRS. FOWLER HOLLABAUGH

Convention Rules of Order

MRS. H. DAVID HICKEY

Registration and Credentials

MRS. OSCAR W. CARTER

Report of President

MRS. ELMER T. PEARSON

Roll Call

MRS. E. E. EDWARDS

Reading of the Minutes

MRS. E. E. EDWARDS

**Report of the Officers
President-Elect**

MRS. JOSEPH D. ANDERSON

Regional Vice-Presidents**East**

MRS. WILLIAM A. GARROTT

West

MRS. HAROLD B. BOYD

Middle

MRS. E. E. WILKINSON

Treasurer

MRS. CHARLES K. SLADE

Corresponding Secretary

MRS. JOHN M. WILSON

Historian

MRS. KENNETH HAILE

Parliamentarian

MRS. H. DAVID HICKEY

INSTALLATION LUNCHEON

Belle Meade Country Club
 12:30 P.M.

MRS. KIRKLAND TODD, JR., Chairman
 MRS. O. A. COUCH, JR., Co-Chairman

Honoring President and President-Elect**Invocation****Speaker**

MRS. O. W. ROBINSON

Awarding of Trophies:**Achievement Award**

MRS. W. W. POTTER

Membership Cups

MRS. LYNCH BENNETT

Installation of Officers

MRS. ROBERT FLANDERS

**Presentation of President's
Pin and Gavel**

MRS. ELMER T. PEARSON

Acceptance

MRS. JOSEPH D. ANDERSON

Adjournment

3:00 P.M.

Tour—The Temple

MRS. ALBERT WEINSTEIN

4:00 P.M.

Tea—Belle Meade Mansion

Davidson County Auxiliary Hostesses

DEATHS

Dr. James Robert Doak, 83, Nashville, died February 1st in a Lebanon Hospital.

Dr. Frank H. Norman, 85, Waynesboro, died January 22nd at his home.

Dr. Herbert Hooke McCampbell, 81, Knoxville, died January 14th in a Knoxville hospital. Dr. McCampbell was a pioneer in the use of X-ray in Tennessee.

Dr. Frank Ward Smythe, 66, Memphis, died January 26th at his home.

Dr. William Bate Dozier, 73, Nashville, died January 27th at Baptist Hospital.

**PROGRAMS AND NEWS OF
MEDICAL SOCIETIES****Hamblen County Medical Society**

The January meeting was conducted at the Public Health Building in Morristown. New committees were appointed for the year. Guests included Dr. Murray of Knoxville and Dr. Tugrel of Dandridge. The society was honored with its speaker, Dr. R. B. Wood, Knoxville, President of the Tennessee State Medical Association, who spoke on medical politics and administration at the state and local levels. The talk was illustrated by slides.

Cocke County Medical Society

The Cocke County Medical Society held

its meeting on January 24th. Dr. J. Edward Campbell, Knoxville, was the guest speaker.

Memphis-Shelby County Medical Society

The society met on January 15th in the auditorium of the Institute of Pathology. The scientific program consisted of the Essay Contest Winners. 1. "The Neural Control of the Pituitary Gland (With Particular Reference to Conditions of Stress)" by Dr. J. H. Miller. 2. "The Early Management of Injuries of the Hand" by Dr. Robert C. Reader. Discussed by Dr. Malcolm Aste. 3. "General Hypothermia; Physiology and Surgical Application" by Dr. James W. Pate. Discussed by Dr. Henry Gotten.

**Nashville Academy of Medicine and
Davidson County Medical Society**

The February 12th meeting was held at St. Thomas Hospital. The program consisted of talks by two certified public accountants on income tax problems. The subject discussed was "The Physician and His Income Tax" by Mr. J. P. Foster and Mr. J. Carmen Davis.

Roane County Medical Society

The meeting was held at the Oak Ridge Hospital on February 26. The scientific program consisted of a symposium entitled "The Medical Impact of Fallout." Subjects discussed were: "How Much Fallout?" by Dr. Myron Fair, Ph.D.; "What Happens to It?" by Dr. Cyril Comar, Ph.D.; "Does It Affect the Patient?" by T. A. Lincoln, M.D.; and "Who Cares?" by Robert W. Ball, M.D.

Knoxville Academy of Medicine

The society met at the Academy of Medicine building on February 12. The scientific program consisted of a report on some studies in Cytology by Dr. R. J. Leffler. The guest speaker was Dr. Amos Christie, Professor of Pediatrics at Vanderbilt University School of Medicine. His subject was "Diagnostic Problems of Pediatrics."

**Chattanooga-Hamilton County Medical
Society**

The society's January 24th meeting consisted of a heart symposium under the auspices of the Chattanooga Area Heart Association. Guest speakers were: Dr. Ungerleider, Director of Medical Research, Equita-

ble Life Assurance Society of the USA, New York—"Recent Advances in Cardiovascular Diseases"; Dr. Eugene Stead, Professor of Medicine, Duke University, Durham, N. C., spoke on 'Pathologic Physiology of Congestive Heart Failure'; and Dr. Irvin Page, Cleveland Area Heart Society, Cleveland, Ohio was the banquet speaker. Ward rounds were held at Erlanger Hospital with the three guest speakers participating. The afternoon session was held in the Interstate Auditorium, the evening session at the Chattanooga Golf and Country Club.

At the February 7th meeting the following papers were read: "The Profession of Medicine and the Business of Insurance" by Dr. Joseph W. Johnson, Jr.; "Hypophysectomy in the Treatment of Cancer of the Breast" by Dr. Walter E. Boehm; and a case report by Dr. George K. Henshall.

Consolidated Medical Assembly

The February 5th meeting was held in the New Southern Hotel. The program consisted of a paper entitled "Physicians' Problems in Administering the Dependents Medical Care Program" by Mr. J. E. Ballentine, Executive Secretary of the Tennessee State Medical Association. Dr. R. H. Kampmeier, of Nashville, spoke on "The Varied Clinical Course in the Collagen Diseases." Discussion was led by Dr. C. B. Wyatt of Jackson.

PERSONAL NEWS

Dr. Wilford H. Gragg, Jr., Memphis, has been named chief of the surgical section of St. Joseph Hospital. He succeeds **Dr. A. J. Grobmyer, Jr.**, who was recently named chief of staff.

Dr. Chas. C. Trabue, IV, Nashville, has been named chairman of a new Medical Policy Committee of the Tennessee Hospital Service Association. Others serving on the committee are **Dr. S. M. Herron**, Jackson; **Dr. R. B. Wood**, Knoxville; and **Dr. Edward T. Newell, Sr.**, Chattanooga.

Dr. John H. Burkhart, Knoxville, recently addressed the Knoxville Kiwanis Club.

Dr. Harold L. Neuenschwander, Knoxville, was a recent speaker before the Knoxville Exchange Club.

Dr. George E. Beckman, Jr., Chattanooga, has become associated with **Dr. Oscar B. Murray** and

Dr. Dewitt B. James in the practice of urology in Chattanooga.

Dr. Wesley A. Barton, Cleveland, has opened an office in Chattanooga.

Dr. Kirkland W. Todd, Jr., Nashville, has been elected Director of the Tumor Clinic at General Hospital.

Dr. Eugene P. Nicely, Knoxville, recently moderated a panel on urinary tract diseases at the Mid-Atlantic Regional meeting of the United States Section of the International College of Surgeons.

Dr. W. K. Owen, Pulaski, has been appointed Chairman of the 1957 heart drive in Giles County.

Dr. Robert W. Quinn, Nashville, recently addressed the Lebanon Jaycettes.

Dr. B. F. Byrd, Sr., Nashville, has been appointed to membership on the Selective Service Appeal Board for Middle Tennessee.

Dr. Dan C. Gary, Union City, has recently been named full-time radiologist at the Obion County General Hospital.

Dr. J. E. Johnson, Chattanooga, was a recent speaker on a television program entitled "Your Doctor Speaking."

Dr. R. R. Kudd, Collierville, announces the opening of his office for the practice of medicine in that city.

Dr. G. E. Johnson, Winchester, has returned to open his office for the practice of medicine in Winchester.

Dr. Francis H. Cole, Memphis, has been elected President of the Methodist Hospital Medical staff.

Dr. Charles Housholder was elected Vice-President and **Dr. Moore Moore, Jr.**, was re-elected to his third term as secretary.

Dr. Edward T. Brading, Johnson City, recently addressed the East Tennessee State College students on the subject "Relation of Emotional Life to Health."

Dr. James A. Robinson, Memphis, has been named director of the new interns and residents training program at Methodist Hospital.

Dr. Gene Kistler, Chattanooga, recently discussed the State Medical Association's legislative program over station WDEF-TV.

Tennessee surgeons participating in a sectional meeting of the American College of Surgeons in New Orleans recently were: **Dr. Robert A. Knight**, Memphis; **Dr. Rollin A. Daniel**, **Dr. S. Benjamin Fowler**, **Dr. J. William Hillman**, Nashville; and **Dr. Lynn D. Abernathy**, Jackson.

Dr. James G. Hughes, Memphis, has been made an honorary professor of the University of San Carlos in Guatemala.

Dr. Junius L. Crossett has joined the staff at the Fayette County Health Department.

Dr. M. G. Skinner, formerly of Ohio, has announced the opening of an office for the practice of medicine at Lymnville.

Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Vol 50 April, 1957 Number 4

The need for early diagnosis is stressed since the prognosis is reasonably good if treatment is early and adequate. Methods of diagnosis are stressed.

ADENOCARCINOMA OF THE ENDOMETRIUM*

G. SYDNEY McCLELLAN, M.D., F.A.C.S., and J. ALAN ALEXANDER, M.D.,† Nashville, Tenn.

Adenocarcinoma of the endometrium constitutes 90 to 95 per cent of all endometrial neoplasms. This disease is of increasing interest to the entire medical profession for several reasons. First, there is a definite increase in the incidence of the disease since more women reach the age at which cancer of the endometrium is most likely to occur; second, practically all members of the profession regardless of their specialty sooner or later come in contact with the disease; third, by its nature it is extremely treacherous since there is only one physical sign, bleeding; and fourth, because this bleeding occurs during or following the menopause it is frequently passed off as a functional hormonal disorder.

There were 100 patients initially treated at Vanderbilt University Hospital between March, 1945, and June, 1955, with the diagnosis of primary adenocarcinoma of the endometrium. All but 8 of these patients have follow-ups through the present year. The facts obtained from a review of the charts of these patients will now be presented.

Incidence and Status

Incidence. The disease occurs more frequently than one is led to believe by standard textbooks which give a ratio of one of cancer of the endometrium to seven or eight of cancer of the cervix. This ratio was probably correct in the first 25 years of this century, but since then it has been changed and probably is still changing. In Mich-

igan, in 1946, Miller¹ gave a ratio of one to five and at Vanderbilt University Hospital in the period of time stated previously the ratio is one to five. Other authors have reported the ratio as being one to three.

Age Incidence. The youngest patient was 37 years of age and the oldest patient was 78 years of age. The greatest incidence occurred in the 55 to 59 age group, and 56 per cent occurred in the 50 to 65 age group. (Table 1.)

Table 1
AGE OF PATIENT AT TIME OF INITIAL THERAPY OR INITIAL DIAGNOSIS

Age Group	Number of Patients	Percentage of Total
35-39	1	1
40-44	6	6
45-49	20	20
50-54	17	17
55-59	22	22
60-64	17	17
65-69	12	12
70-74	4	4
75-79	1	1
TOTAL	100	100

Youngest Patient—37 years
Oldest Patient—78 years

Economic Status. It is definitely true, and our figures support the statement, that women with adenocarcinoma of the endometrium are from a higher economic status than those with cancer of the cervix. Seventy-four per cent of these patients were private patients while only 26 per cent were staff patients.

Parity. In table 2, one can see that 91 per cent of the patients were married. Of these patients, 25 per cent were nulliparous and 84 per cent had fewer than five deliveries. Approximately one-third of the 100 patients were either single or nulliparous.

*Read before the meeting of the Tennessee Chapter of the American College of Surgeons, April 10, 1956, Memphis, Tenn.

†From the Department of Obstetrics and Gynecology, Vanderbilt School of Medicine, Nashville, Tenn.

Table 2
PARITY

<i>Number of Deliveries</i>	<i>Number of Married Patients</i>	<i>Percentage of Total Married Patients</i>
0	23	25
1 through 4	54	59
5 through 9	10	11
10 through 14	4	5
TOTAL	91	100

Symptoms and Signs

In table 3, it will be noted that of the 100 patients treated, 72 per cent were postmenopausal. Healey and Brown² reported that 78 per cent of their patients experienced the onset of their symptoms after cessation of menstruation.

Table 3
MENOPAUSE

<i>Pre- or Postmenopausal</i>	<i>Number of Patients</i>	<i>Per Cent</i>
Premenopausal	20	20
In menopause	8	8
Postmenopausal	72	72
TOTAL	100	100

Abnormal uterine bleeding, the most important symptom of endometrial carcinoma has been mentioned. It is a fact that cannot be overemphasized, and was present in 90 per cent of the patients studied as the chief complaint.

Discharge, malodorous and watery, long considered a precursor of bleeding, was noted in only 7 of the 100 patients. It is a symptom, the history of which is difficult to obtain because of the common presence of leucorrhea. Other authors give an incidence of 35 per cent.

Pain is an unreliable symptom of cancer of the endometrium and the vague pain that so many patients mention is difficult to interpret. (Table 4.)

Table 4
CHIEF COMPLAINT

<i>Complaint</i>	<i>Number of Patients</i>	<i>Per Cent</i>
Bleeding	90	90
Pain	2	2
Discharge	7	7
Other*	1	1
TOTAL	100	100

*Pelvic Relaxation

A most striking characteristic, and very typical of the bleeding, was that of postmenopausal bleeding in 67 per cent of the patients. (Table 5.)

Table 5
TYPE OF BLEEDING

<i>Type</i>	<i>Number of Patients</i>	<i>Per Cent</i>
Postmenopausal	67	67
Menorrhagia	19	19
Metrorrhagia	6	6
None	8	8
TOTAL	100	100

The duration of symptoms as seen in table 6 is interesting but possibly unreliable since it is a known human frailty to inaccurately report events in chronologic order. The most serious inference drawn from the chart is the fact that 31 per cent of the patients waited 12 months or longer before seeking medical advice. This graphically emphasizes the need for patient education.

Table 6
DURATION OF SYMPTOMS

<i>Months Number of</i>	<i>Patients Number of</i>	<i>of Total Percentage</i>
0	1	1
1	21	21
2	11	11
3	10	10
4	2	2
5	4	4
6	10	10
7	1	1
8	5	5
9	0	
10	4	4
11	0	
12	12	12
Over 12	19	19
TOTAL	100	100

Multiple sources of bleeding must be kept in mind. The polyp, either cervical or endocervical, and fibromyomata have been considered the only sources of bleeding. Other causes were not investigated and the patient received an incomplete operation or was ignored. The cancer was discovered in the operative specimen or completely neglected.

Pelvic Examination. The pelvic examination shows no abnormalities except the finding of blood or tissue in the cervical canal. This is the only positive physical sign of cancer of the endometrium, and this in itself makes the disease most treacherous. It

is true that as the disease advances the uterus becomes larger, more globular and the consistency is slightly boggy. Extension beyond the uterus will be local and by metastases. The local extension occurs very late in the disease and when the uterus is found to be fixed and the parametrium involved, the disease has reached an advanced stage. In moderately advanced stages the cervix is more patulous, soft, and the os instead of being stenotic, is open and admits a sound easily.

At times it is difficult to determine whether or not the source of bleeding is from the urinary tract, rectum, or vagina. A tampon placed in the vaginal vault will catch the bleeding from the cervix and in this way the source can be definitely determined. This is an extremely valuable diagnostic aid.

Methods of Diagnosis

The methods of diagnosis most used are the Papanicolaou Vaginal Smear, the suction biopsy, and dilatation and curettage. Cytologists have been slow to recognize the adenocarcinoma cell. Therefore, the vaginal smear has not been as helpful as it promises to be in the near future for the diagnosis of adenocarcinoma of the endometrium.

Suction biopsy is accurate in approximately 80 per cent of the cases of cancer of the endometrium. If positive, it reveals the presence of cancer but does not tell of its location and extent. Some hospital expense may be eliminated by this office procedure.

Dilatation and curettage is reliable in nearly all cases if it is properly performed. It should be done in the manner of an exploratory procedure for determining the size and the shape of the uterine cavity and the location and extent of any local disease. A so-called fractional curettage is extremely valuable since the extension into the endocervix can be determined. In performing a fractional curettage the endocervix is curetted first by a small curette without previously sounding or dilatation of the cervical canal. The tissue obtained from the endocervix is sent to the laboratory in a separate container. After the curettement of the endocervix the cervix is dilated in the usual manner, the uterus is

sounded to determine its depth and the uterine cavity explored with a small sponge forceps to determine the possible presence of polyps. After this the cavity is systematically and carefully curetted. Fractional curettage is important because if the endocervix is found to be involved with extension of an endometrial cancer, the treatment of the condition varies considerably. In other words, such a condition would require the treatment one gives for carcinoma of the cervix,—that is, either complete radiation treatment, such as the combined use of radium and external radiation in the form of deep X-ray therapy or cobalt therapy, or radical hysterectomy with removal of the regional lymph nodes.

Pathology

Important points to remember regarding the direction of spread of adenocarcinoma of the endometrium are:

1. Along the inner surface of the uterine canal into the cervical canal.
2. Directly into the underlying myometrium and eventually through this to the peritoneum and parametrial tissue.
3. Direct spread to the tubes and ovaries.
4. The veins of the uterus.
5. Through the lymphatic system.

The lymphatic system is the most important route of spread. The lymphatic routes usually followed from the cornu and upper uterus are directly to the aortic nodes. From the lower uterus and cervix the carcinoma cells spread to the hypogastric and obturator nodes. As previously stated, the spread of the endometrial cancer to the cervix creates a very special problem since the lymphatic drainage from this region passes through the paracervical lymph nodes and lymph vessels in the same manner as does that of squamous cell carcinoma of the cervix. Everyone familiar with this type of work knows of the not infrequent metastases from endometrial carcinoma to the tubes and ovaries, and incidentally the frequent metastases from carcinoma of the ovary to the endometrium.

Treatment

There is a voluminous literature regarding the curative treatment of this disease.

Carcinoma of the endometrium has been cured by intracavitary radium, external radiation, supravaginal hysterectomy, vaginal hysterectomy, complete hysterectomy with or without removal of the adnexa, radical hysterectomy with lymphadenectomy, and by a combination of radiation and operation. A variety of treatments have also been used for cancer of the cervix but paradoxical cures are not quite as numerous as in cancer of the endometrium. The Radiumhemmet in Stockholm, Sweden, is the only clinic that has used intracavitary radium alone in the treatment of a large number of cases. Kottmeier³ reports 695 patients treated by the packing technic, and of these patients 61.6 per cent were alive and well five years after treatment.

Every conceivable combination of radium, X-ray, and surgery has been employed in the treatment of endometrial carcinoma. It is extremely difficult to evaluate results in any series of cases because the numbers are too small. There are very few reports on treatment of carcinoma of the endometrium that are statistically valid. In addition to the small number of cases there is a second element, which is that of selection.

Hysterectomy, with or without preoperative irradiation, is in this country the universally accepted treatment for carcinoma of the endometrium. No one in this country has matched the excellent results achieved by irradiation at the Radiumhemmet. When operative measures are mentioned, a complete abdominal extrafascial hysterectomy with bilateral salpingo-oophorectomy is performed. A good vaginal cuff should be removed, but it has been the experience of many that after removal of the uterus with what was thought to be a good vaginal cuff, the retraction of the vagina seemed to leave practically no cuff at all. The operation should be performed outside of the fascial or capsular envelopments of the uterus and cervix since the carcinoma seems to be localized within this fascial envelopment for a period of time.

The two most commonly used methods of applying radium preoperatively are the use of the tandem, where the radium is placed in one long pencil-like applicator, and the packing technic where numerous small applicators are packed into the uterine cavity.

One can readily see the advantages of the packing technic since every part of the uterus is irradiated, whereas, with the tandem the distance between the tandem and the uterine walls may be so great that a cancericidal dose is not delivered to all areas of the endometrium.

The interval between the application of preoperative radium and the operation is conventionally six weeks. It has been found by experience that at this time the uterus is in the best possible condition for operation. It has shrunk in size and the planes between the bladder and the uterus and cervix, and the rectum and the cervix are more easily established.

Radical hysterectomy with lymphadenectomy, using the same technic that is used for the treatment of carcinoma of the cervix, has been tried in a small number of cases. From all reports this radical operation does not seem justified because the results are no better than the so called total extrafascial hysterectomy and carries much more risk. This radical operation does not seem logical since the metastases from carcinoma of the endometrium are to the aortic glands rather than to the local lymph nodes.

In the light of present knowledge, the best treatment for carcinoma of the endometrium is intracavitary radium using the packing technic, followed in six weeks by extrafascial or extra-capsular complete abdominal hysterectomy with bilateral salpingo-oophorectomy. Postoperatively, immediately or within 7 to 10 days, vaginal application of radium in the region of the cuff of 2000 milligram hours is extremely valuable in avoiding vaginal metastases. This complication has been seen to occur within 6 months after definitive treatment. If nodes seem to be involved external radiation should be started within a period of six weeks.

In reviewing table 7, it would seem that surgery alone without preoperative radium would be the treatment of choice since the survival rates are higher. This is not a reliable comparison, however, because 7 of the 9 possible survivors from the "surgery alone" series underwent hysterectomy for nonmalignant gynecologic conditions without the diagnosis of adenocarcinoma of the

endometrium having been established or suspected.

In table 7 it is shown that only 67 of the 100 patients in the study are possible 3 year survivors. The remaining 33 patients received their initial treatment less than 3 years ago.

Table 7
BREAKDOWN OF SURVIVORS INTO
METHODS OF TREATMENT

Years of Survival	Radium Alone			Surgery Alone		
	Possible Survivors	Survivors	Survival Rate	Possible Survivors	Survivors	Survival Rate
3	14	6	43	10	10	100
4	14	6	43	10	10	100
5 or more	11	5	45	9	9	100

Years of Survival	Radium and Surgery			No Treatment		
	Possible Survivors	Survivors	Survival Rate	Possible Survivors	Survivors	Survival Rate
3	41	34	83	2	0	0
4	29	24	83	2	0	0
5 or more	21	16	76	2	0	0

Prognosis

Prognosis for carcinoma of the endometrium is very good with a variety of treatments. In this group of patients studied, there has been a variety of operators, including members of the house staff and visiting staff, over a period of 10 years and these gynecologists have used different treatments and combinations of treatments. (Tables 8 and 9.) In contrast to carcinoma of the cervix, carcinoma of the endometrium remains localized for a period of time, with the exception of about 5 per cent of the tumors which seem to have a very rapid growth with early metastases probably through the blood stream.

Table 8
OVERALL SURVIVAL (3 YEARS OF MORE)

Years of Survival	Possible No. of Survivors	No. of Survivors	Survival Rate
3	67	50	74.6
4	55	40	72.7
5 or more	43	30	70.0

Table 9
RESIDUAL CARCINOMA PRESENT IN OPERATIVE SPECIMEN FOLLOWING RADIUM APPLICATION BY MULTIPLE PACKING TECHNIQUE AS COMPARED TO THAT FOLLOWING TANDEM APPLICATION

Technique	Number of Applications	Number of Patients with Residual Carcinoma	Per Cent of Patients with Residual Following Each Technique
Multiple Packing	22	3	14
Tandem Application	38	19	50
TOTAL	60	22	37

The primary mortality after irradiation alone or operation alone, or combination of the two is low. Localized irradiation injury is rare. Even with the extra-fascial total abdominal hysterectomy, where it is quite often necessary to expose the ureters, the primary mortality from operation is extremely low.

It is difficult to correlate the duration of symptoms with the survival rate of the disease. However, as is true with any carcinoma, the patient, who is treated as soon as possible after the appearance of bleeding, will stand a better chance of survival than one in which there is a long delay in diagnosis and definitive treatment.

Conclusion

In conclusion the following points should be emphasized:

1. Adenocarcinoma of the endometrium is a treacherous disease, since so often the bleeding is considered by the patient and her physician to be a manifestation of the menopause.
2. There is only one physical sign of the disease and that is the recognition of blood coming from the cervical os.
3. The outstanding symptom of the disease is bleeding from the vagina.
4. A fractional curettage should be done on all patients for diagnosis, or if the diagnosis has been made previously by suction curette, it should be done at the time of implantation of radium.
5. The treatment suggested is preoperative radium therapy, by the packing technic, of the uterus, using multiple small applicators. Six weeks following the implantation of radium an extra-fascial total

abdominal hysterectomy with bilateral salpingo-oophorectomy should be done; within the immediate postoperative period radium should be applied to the vagina. External irradiation is given depending on the extent of the disease found at operation.

6. When major surgery is deemed inadvisable because of medical complications, radiation alone in the form of radium and deep X-ray therapy or cobalt therapy should be used.

7. Since the interval between therapy for carcinoma of the endometrium and the first evidence of recurrence is short,¹ it is neces-

sary that frequent follow-up examinations be done.

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The Surgical Treatment of Persistent Common Atrioventricular Canal. Cooley, J. C., Kirklin, J. W., and Harshbarger, H. G.: *Surgery* 41:147, 1957.

This paper describes the type of anatomic abnormality encountered in the persistent common atrioventricular canal and gives the authors' method of dealing with it surgically. This is a congenital malformation of the heart which combines the complexities of defects of the atrial and ventricular septa with defects in the atrioventricular valves. It was a pathologic curiosity for years but more recently this lesion has been accurately diagnosed and treated surgically.

Between the fourth and sixth weeks of life of the human embryo, two endocardial cushions, one dorsal and one ventral, appear at the junction of the single atrium and ventricle, the atrioventricular canal. They grow in the midline of this canal, ultimately coming in contact with each other, and they divide the canal into right and left halves. While these changes are occurring the primary interatrial septum and muscular interventricular septum are developing. The interatrial septum grows down from the superior and dorsal walls of the atrium, narrowing the communication between the two atria, the interatrial foramen primum. Similarly, the muscular portion of the interventricular septum grows upward from its anlage at the ventricular apex to narrow the communication between the two ventricles. When the endocardial cushions have united anteroposteriorly, they send out a superior prolongation which meets the developing atrial septum and an inferior prolongation which joins the ventricular septum. The result of failure of proper development and fusion of these endocardial cushions produces a defect in the lower atrial septum, a defect in the upper posterior ventricular septum, and defects in the anterior leaflet of the mitral valve and the septal leaflet of the tricuspid valve. This comprises the lesion known as "persistent common atrioventricular canal."

The authors feel that when the diagnosis of persistent common atrioventricular canal has been established, operation should be advised unless a specific contraindication exist. Without surgical correction, the outlook for a normal life span is very doubtful. The one complication which contraindicates operation is increased pulmonary resistance of sufficient severity to cause the predominant shunt to be from right to left. This can best be diagnosed by cardiac catheterization.

The authors believe the most satisfactory surgical approach of this lesion to be open cardiomyotomy with the patient supported by the extracorporeal circulation of blood through a pump-oxygenator. The operation is carried out through a bilateral anterior thoracotomy incision to the fourth interspace with division of the sternum. With the circulation intact, the interior of the right atrium is digitally explored through the right auricular appendage and careful search is made for regurgitation through either side of the common atrioventricular valve. Extracorporeal circulation is then established and a long vertical incision made in the right atrium. Closure of the defect is made by suturing a piece of noncompressed Ivalon sponge (4 mm. thick) of proper size and shape into the defect. Interrupted sutures of 000 silk are employed. When the sponge is being sutured to the postero-inferior margin of the defect, the sutures are placed in such a way that tight encirclement of the free edge of the ventricular septal remnant which may contain the bundle of His is avoided. If defects exist in either the mitral or tricuspid valve, such defects are closed with interrupted 00000 silk sutures. The incision in the right atrium is then closed and the heart is allowed again to take over the circulation. This repair has been carried out by the authors in 9 patients, 7 of whom are surviving and have been benefited by operation at the time of this report. (Abstracted for the Middle Tennessee Heart Association by Walter L. Diveley, M.D., Nashville.)

Rupture of the spleen is an abdominal emergency. It should be kept in mind as a possibility in any disease characterized by splenomegaly.

RUPTURE OF THE SPLEEN

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Rupture of the Normal Spleen

Spontaneous rupture of a normal spleen, although rare, is a definite clinical entity. Grossman,¹ in 1942, reported that the occurrence of a nontraumatic rupture of a previously normal spleen has been known for centuries. He stated that perhaps a total of two or three dozen had been reported in the literature up to that time. A classic description of spontaneous rupture of a normal spleen was written by Hamilton.² Another report of spontaneous rupture of normal spleens was given by Moore and Chapman³ in 1950. Zuckerman and Jacobi⁴ reviewed the literature and found 21 authentic cases of spontaneous rupture of a normal spleen, and they added 2 cases of their own. The splenic rupture was due to coughing in one and to sneezing in the other case. Babson and Morgan⁵ collected 8 more cases from the literature, and added their 2 cases. In 1952, Nicoll⁶ reported a case of spontaneous rupture of an apparently normal spleen. There were perisplenic adhesions noted in the pathologic report, but it was thought that these adhesions may have originated during illness with malaria 25 years prior to the rupture, although Nicoll did not consider this to be a pathologic spleen in the true sense of the word.

In all of these reports, it should be emphasized that spontaneous rupture implies that there has been no history of trauma, or that the degree of trauma has been so insignificant that it may not be considered a causative factor.

Delayed Rupture of the Normal Spleen

Kirk and Haynes⁷ described 3 cases of delayed rupture of the normal spleen following trauma. In their report, the trauma occurred from 6 to 31 days prior to rupture. All of these cases presented a history of an

injury to the left upper abdomen or the left lower chest. However, trauma to the right side may cause splenic rupture by coup effect. Attenborough⁸ commented on the numerous theories which have been advanced to account for a latent period before rupture of the spleen after trauma. He was in agreement with Susman⁹ that the formation and later rupture of a subcapsular hematoma accounts for some cases. McIndoe¹⁰ placed injuries in three categories: (1) minor capsular rupture or parenchymal injury, (2) subcapsular hematoma, and (3) capsular hemorrhage with perisplenic hematoma. Delannoy¹¹ associated these pathologic lesions with the symptomatology, and suggested two clinical types: (1) splenic rupture with delayed hemorrhage, corresponding with McIndoe's subcapsular hematoma, and (2) rupture with retarded symptoms, corresponding with the perisplenic hematoma. In the first type, there is a symptom-free latent period, while in the second, the latent period may be marked by pain of varying severity occurring in the left hypochondrium and shoulder, or, at times, by generalized abdominal discomfort.

Spontaneous Rupture of the Diseased Spleen

Spontaneous rupture of a diseased spleen is a definite pathologic entity. In offering a classification of nontraumatic rupture of diseased spleens, Grossman¹ subdivided the cases into two categories: (1) chronically diseased spleens, and (2) acutely diseased spleens. The former group are those likely to be classified as primary nontraumatic rupture, and Brines,¹² in 1943, pointed out that the site of rupture may be one abnormal portion of the organ, while in the remainder the tissue is normal. He emphasized that any condition which causes increased intra-abdominal pressure, such as coughing, sneezing, twisting, and lifting, may be responsible for splenic rupture. Susman⁹ believed four conditions of the spleen to be likely factors in rupture: (1) soften-

*Presented before the Department of Medicine, Baptist Memorial Hospital, Memphis, Tenn., June, 1953.

ing of the spleen and capsule, (2) congestion of the portal vein, (3) formation of a subcapsular hematoma, as noted by McIndoe,¹⁰ and (4) perisplenic adhesions.

Numerous cases of rupture of malarial spleens are reported in the literature. Many reports of rupture in patients with infectious mononucleosis, multiple hemangiomas involving the spleen, typhoid fever, leukemia, kala-azar, and cirrhosis of the liver can be found. This latter condition would account for rupture due to congestion in the portal vein as noted by Susman.⁹ It is possible that the spleen could be ruptured by palpation in a patient with infectious mononucleosis.

Symptoms and Signs of Spontaneous Rupture

The diagnosis of spontaneous rupture of the spleen should be suspected when a patient complains of spontaneous pain in the left side of the abdomen, followed by symptoms of peritoneal, or diaphragmatic irritation coupled with a clinical picture of shock. There may or may not be a diseased spleen.

The physical findings include signs of hemorrhage and low red blood cell count, fast weak pulse, pallor, air hunger, and restlessness. Abdominal tenderness and rigidity may be generalized, but are more pronounced in the left upper quadrant. There may be rebound tenderness, with referral of pain to the left upper quadrant and to the left shoulder, increased splenic dullness, a fluid wave, and Ballance's sign, or fixed dullness in the left flank due to the enlarging hematoma and shifting dullness in the right flank due to unclotted blood and serum.

Symptoms and Signs of Delayed Rupture

Delannoy¹¹ described the symptoms of his patients with delayed rupture of the spleen. In them persistent tenderness and rigidity in the left upper quadrant are found. Pallor, weakness, dizziness and fainting spells are common, though they are seen more frequently with a slow continuous leak than with true delayed rupture. One case reported by Coyle, Kleinman and Smith¹³ presented gradual abdominal distention and anemia. Zabinski and Harkins¹⁴ reported the frequency of associated fractures of the ribs, a fact previously recognized by Mc-

Indoe,¹⁰ who stressed the importance of keeping under observation any patient with an injury to the left side for fourteen days, particularly if complicated by fractured ribs. However, it must be remembered that delayed rupture of the spleen can occur after quite a trivial or forgotten injury, and it is probable that many, if not all the cases reported as spontaneous rupture of a normal spleen fall into this category.

Diagnosis and Differential Diagnosis

Any of the symptoms of a spontaneous or delayed rupture of the spleen would be sufficiently obvious to make one suspicious of an acute abdominal emergency. Other conditions causing spontaneous intra-abdominal hemorrhage, such as rupture of an abdominal aneurysm, rupture of splanchnic vessels in patients with arteriosclerosis, and spontaneous bleeding from the genital organs in females, will be confused with splenic rupture. Differential diagnosis, in addition to the conditions causing intra-abdominal bleeding, would include a ruptured peptic ulcer, coronary occlusion, acute pancreatitis with shock, and perforation of a gallbladder, or some other viscus in the upper abdomen.

X-ray film of the abdomen reveals increased density in the left upper quadrant of the abdomen, elevation of the left side of the diaphragm, displacement of the stomach to the right and free fluid between loops of intestine. Levine and associates¹⁵ have described obliteration of the splenic shadow and dilatation of the stomach with serrations of the greater curvature.

Treatment

The treatment of this emergency is splenectomy, since the bleeding must be stopped at once. Adequate preoperative care resolves itself into the treatment of shock; whole blood is the fluid of choice.

Case Reports

Case 1. Present History. This 24 year old white man was admitted to the hospital because of failure to respond to treatment in his home for an acute infection. His illness began with sore throat, malaise, anorexia, and fever. Although penicillin injections were given for several days, he noted no improvement, and requested hospitalization in a private hospital.

Past History. Thirteen years prior to entry, the patient had chronic sinusitis, and mastoiditis. Otherwise past history was irrelevant.

Physical examination. T. 102.0, B.P. 118/70. The patient was a well developed, well nourished white man who was acutely ill. The mucous membrane of the nose and pharynx was hyperemic. The tongue presented a geographic appearance. The spleen was enlarged 4 finger-breadths below the left costal margin and was quite tender. The liver was felt 2 cm. below the right costal margin. Large, discrete, freely movable, tender nodes were felt in the neck, axillas and inguinal regions.

Laboratory Studies. R.B.C. and Hbg. were normal. The W.B.C. numbered 5,500 with 35% neutrophils, and 54% lymphocytes of which 8 were atypical, 5% monocytes, and 6% eosinophils. The heterophil antibody test showed a titer of 1:224 to 1:1896. Subsequent W.B.C. and differential counts revealed a total count ranging between 5,000 to 10,000 with a predominance of lymphocytes and many atypical lymphocytes.

Course in Hospital. There was no response to specific medication, though the symptoms abated when analgesics and other symptomatic treatment were employed. Malaise and anorexia were prominent symptoms. There was some fullness in the upper abdomen. On the morning of the fourth day after admission, the patient went to the lavatory and evacuated his bowel. Just following a period of straining on the toilet, he complained of sudden pain in the abdomen, weakness, dizziness and sweating. He called for an orderly who carried him to his bed. In a few minutes he was in a state of shock and became comatose. The abdomen was soft and distended. A diagnosis of ruptured spleen complicating acute infectious mononucleosis was made. The patient was taken to the operating room, and after proper preparation with blood transfusions before and during the operation, the abdomen was opened, and a ruptured spleen was removed. A biopsy of the liver was made at the time of operation. The patient made an uneventful recovery, and was transferred to the Veterans Hospital for convalescence. He continued to have enlarged and tender lymph nodes, a positive heterophil antibody reaction, and atypical lymphocytes in the peripheral blood smear for many months.

Final Diagnosis. Acute infectious mononucleosis; spontaneous rupture of the spleen complicating infectious mononucleosis.

Case 2. Present History. This 46 year old white man was admitted to the hospital with complaints of painful and swollen lymph nodes for 8 months. At the onset he noted small anterior cervical nodes in the neck. Over a period of the next few months the nodes became sore and increased in size. Some of the nodes were soft and others seemed to be quite hard. In several more months he noted that nodes were present in all portions of the neck and in the supraclavicular regions. A biopsy of one of the left supra-

clavicular nodes led to a diagnosis of lymphosarcoma.

X-ray therapy was recommended. During the next 3 months he had three courses of deep X-ray therapy to the neck, and one course to the left inguinal region where numerous nodes were found 5 or 6 months after the onset of his illness. There were also enlarged nodes in the right inguinal region by the end of the sixth month. In another month he was told his spleen was enlarged.

A short time later he had a sudden attack of severe pain in the left upper quadrant with radiation to the precordium and to the left upper shoulder. After several hours the pain localized in the left upper quadrant of the abdomen.

During the preceding year before death the patient had been listless and seemed to lack his usual energy. Lately, he had had anorexia and nervousness. Two months prior to entry to the hospital, he had no sense of taste. He was told that this resulted from X-ray therapy.

Past History. In the Army, 4 years before his death, the patient was reclassified because of a diagnosis of cardiovascular disease with a systolic blood pressure of 180. Electrocardiographic and radiographic studies were negative. His usual weight was 182 lbs.; his present weight, 172 lbs.

Physical Examination. The patient was a 46 year old obese white man who appeared chronically and seriously ill, and showed signs of recent weight loss. He attempted to cooperate with the examiner, but due to debility he hesitated to answer promptly when asked some questions. He was quite tremulous. Prominent masses were visible in the anterior and posterior regions of the neck. The conjunctiva was pale. The fundi revealed a very slight increase in the light reflex of the arteries and some tortuosity. The tongue was red and beefy, and atrophy of papillae was noted. Dullness at the bases was found at higher levels than the usual, and was thought to be due to elevated leaves of the diaphragm. Increased bronchial breathing was heard in the right lower lobe near the vertebral column. The heart was not enlarged. P. was 120, B.P. 142/92. In the left upper quadrant of the abdomen, an irregular, hard, tender mass was felt 7 cm. below the costal margin; this did not move with respiration. The liver and spleen were enlarged upwards to percussion. A small nodule was felt in the anterior wall of the rectum. The nail beds were pallid, and numerous purpuric lesions were noted on the chest, back and abdomen. Numerous irregular, fixed masses were seen and felt in all parts of the neck, in the axillas, and in the femoral and inguinal regions. The epitrochlear nodes were also enlarged. Most of these masses varied in size from that of a walnut to a large orange.

Laboratory and X-ray Studies. The R.B.C. was 2,330,000 with 52% (8 Gm.) of Hbg. The W.B.C. was 14,600 with 36% neutrophils and 64% lymphocytes, of which 50 were atypical. The sedimentation rate was 0 by the Wintrobe method. The urinalysis revealed 2 plus albumin.

Course in Hospital. The patient had a low grade fever during his stay of five days. He remained seriously ill and slightly disoriented, and complained of the left upper quadrant pain which was relieved by opiates. At 12:30 a.m. on the morning of his death, he was in the lavatory when he became weak and staggered toward his bed. He complained of pain in the left upper abdomen. Within a few minutes he lapsed into a coma, his pulse became weak and thready, and he was dyspneic. The abdomen was distended and some rigidity was noted in the left upper quadrant. X-ray film of the abdomen and blood transfusions were ordered, but he died in shock before anything could be done. A diagnosis of spontaneous rupture of the spleen was made.

Final Diagnosis. (1) spontaneous rupture of spleen; (2) lymphosarcoma, generalized; (3) anemia, secondary to malignancy; (4) avitaminoses, multiple; and (5) infarct of spleen, remote.

Discussion

Splenic rupture is a very serious abdominal emergency. Rupture of the normal spleen usually results from severe upper abdominal injury due to a blow, a fall, or exploratory puncture. Shock develops rapidly, or after a brief latent period from internal hemorrhage, and a board-like rigidity of the abdominal musculature is of diagnostic significance. A delayed reaction is sometimes encountered when a subcapsular hemorrhage occurs at the time of the trauma, but rupture of this hemorrhagic area may occur some hours, or days later with accompanying agonizing pain and shock which resemble the symptoms of torsion with signs of internal hemorrhage.

Spontaneous rupture occurs mainly in diseased spleens, although reports in the literature show that some cases occur in normal spleens. Other cases of spontaneous rupture have been secondary to an infarct, an abscess, or an acute infectious splenic tumor. Specific diseases in which rupture of the spleen occurs with minimal trauma are malaria, typhoid fever, cirrhosis of the liver, infectious mononucleosis, influenza, leukemia, kala-azar, and lymphosarcoma. Malaria is by far the most common cause of spontaneous rupture of the spleen.

Perez-Pina, Hartvey and Zimmerman¹⁶ reported that until 1948 only 136 cases of rupture of the spleen due to malaria had been reported. This is a relatively rare complication considering the fact that about

300,000,000 cases of malaria are estimated to occur annually in the world.

Many cases of splenic rupture are undiagnosed and not reported, and others are diagnosed but not reported.

Splenic rupture due to sarcoidosis was reported by Phillips and Luchette,¹⁷ in 1952, and another instance of rupture in a patient with infectious mononucleosis was reported by Belton.¹⁸ A rupture of a splenic angioma was reported by Geelkerken and Bakker.¹⁹ A case of rupture in primary amyloidosis was reported by Wiley and associates,²⁰ and in England, Spence²¹ reported a case of rupture in a patient with infectious mononucleosis. In another report Best and Schmid²² discuss cases of ruptures of malarial spleens unassociated with external trauma.

Diseased spleens should be regarded as potentially dangerous, since minimal trauma may produce rupture. Any patient with either a systemic or a localized disease involving the spleen should be examined carefully, and should be warned of the dangers of this complication from trauma.

Summary and Conclusions

Spontaneous rupture of a normal spleen, although rare, is considered to be a definite clinical possibility.

Spontaneous rupture of a diseased spleen is a definite pathologic entity. More cases are reported in the literature each year, and it is thought that many more exist, but either are undiagnosed or if diagnosed, not reported.

Malaria is one of the leading diseases which can lead to ultimate spontaneous rupture of the spleen. Infectious mononucleosis also ranks high as a cause of spontaneous rupture of the diseased spleen.

In the cases of spontaneous rupture of the spleen in the present report one patient had infectious mononucleosis and the other lymphosarcoma, generalized.

Traumatic rupture of a normal, or a diseased spleen, is a fairly common surgical emergency.

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Limited Use of Anticoagulants in Acute Myocardial Infarction. Henry I. Russek and Burton L. Zohman, J.A.M.A. 163:922, 1957.

The authors state that after 8 years of extensive clinical study they have found no valid evidence that all patients with myocardial infarction should be treated anticoagulants.

Patients with acute myocardial infarction can be divided, when first seen into "good" and "poor risk" categories in which, in a previously reported series of over 1,000 cases, mortality rates of 3 and 60% respectively were found. "Good risk" patients are defined as those without previous myocardial infarction who, on initial examination, do not have intractable pain, severe or persistent shock, cardiac enlargement, gallop rhythm, congestive failure, auricular fibrillation or flutter, ventricular tachycardia, intraventricular conduction defect or complications such as diabetic acidosis, obesity, varicose veins, etc., which predispose to thrombosis.

One thousand "good risk" cases treated by generally accepted conservative methods without anticoagulants are reported. The age and sex distribution was not unusual and diagnostic

criteria included a typical clinical onset and classic electrocardiographic findings on serial tracings.

Thromboembolic complications were found in only 2.3%. Thirty-three patients, or 3.3% of the 1,000 died. Twenty-four deaths could have been prevented by anticoagulants, since in 16 death occurred in the first 48 hours of treatment before anticoagulant effect would normally have developed, 4 died from ventricular rupture and 4 from noncardiac causes. Of the nine deaths which presumably could have been prevented by anticoagulants one was from cerebral embolism, three from recurrent myocardial infarction and five from undetermined causes.

Autopsy studies indicated that the death rate from thromboembolism in "good risk" patients dying of myocardial infarction was less than 1%. A death rate of 1.7% from hemorrhagic complications has recently been reported by proponents of the universal use of anticoagulant therapy in myocardial infarction. The authors conclude that in "good risk" cases, the dangers of anticoagulant therapy exceed its probable benefits and that it is therefore contraindicated. (Abstracted for the Middle Tennessee Heart Association, C. C. Woodcock, M.D., Nashville.)

New antihypertensive drugs continue to appear as the pharmaceutical houses synthesize compounds hoping to reach the ideal of maximum efficiency with a minimum of untoward reaction.

STUDIES ON THE USE OF MECAMYLAMINE IN 10 CASES OF MODERATE AND SEVERE HYPERTENSION

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Mecamylamine hydrochloride* is a water soluble secondary amine, completely absorbable from the gastrointestinal tract.^{1, 2} This drug is a long acting ganglionic blocking agent. Its duration of action is reported to be 10 to 20 times that of hexamethonium and 3 to 4 times that of pentolinium.^{1, 2} This means that its action lasts from 10 to 36 hours. Its onset of action is relatively rapid, being in the range of 30 to 120 minutes.³

Unlike the quaternary ammonium compounds, mecamylamine is evenly absorbed from the gastrointestinal tract and the erratic blood pressure responses seen with the other blocking agents are not present.^{1, 2} It is as effective when given by mouth as when given parenterally.² The combination of long action and even absorption gives a more predictable and constant blood pressure response than the other available agents.

Mecamylamine can be determined in biologic fluids by a methyl orange method.⁴

The ganglionic blockade occurs at both the sympathetic and the parasympathetic synapses. For this reason such side effects as dryness of the mouth, constipation (adynamic ileus), and urinary difficulties are not too uncommon in therapeutic doses.¹ However, in none of my cases did these side effects require stopping the drug. Mecamylamine also possesses a mild (0.08 that of a d-tubo-curare)¹ curare-like effect seen clinically as weakness and fatigue.

Mecamylamine possesses no antihistaminic, atropine-like, or adrenergic blocking properties.^{4, 5} It is removed from the body via the kidneys by both excretion (glomerular filtration) and by secretion (by the tubular epithelium).⁴

Experimental data indicate that the orthostatic hypotension seen with this and the other ganglionic blocking agents is accomplished largely by a reduction in cardiac output and not by a decrease in peripheral vascular resistance.⁶

Method

This report is intended as a study of the use of a new ganglionic blocking agent in moderate and severe essential hypertensives on an outpatient basis. The study covers 10 patients, all of whom had been under treatment with other agents for their hypertension. All of these patients had been treated for months and several for a period of years. The drugs they had been taking were phenobarbital, Raudixin, and Apresoline. None of the patients were responding to their therapy.

Before starting the patients on mecamylamine, all drugs were discontinued and certain baseline studies done. These studies consisted of a complete history and physical, care being taken to record the eyeground findings on the chart, blood nonprotein nitrogen, urinary specific gravity and protein, electrocardiogram and chest X-ray film. These studies were repeated later in the course of therapy to furnish an idea of renal and cardiac status after treatment and blood pressure reduction. The blood pressures used in table 2 are the average of 5 or more separate recordings over a period of many months.

The average mean* and average blood pressures were 151 and 209/122, respectively. The electrocardiograms of all the patients showed patterns of left ventricular strain and/or hypertrophy. The chest films all showed cardiomegaly. Approximately

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*Kindly supplied as Inversine by Sharp and Dohme, Division of Merck & Co.

*Appreciation is given to Dr. Hall S. Tacket, Assistant Professor of Medicine, The University of Tennessee, College of Medicine, for his assistance in this study.

half the patients had abnormal renal studies (fixed urinary specific gravity, proteinuria, and/or elevated nonprotein nitrogen).

The drug was given, starting with low dosage and increased in weekly steps according to the schedule given in table 1.

Table 1

Week	8:00 a.m.*	Noon*	5:00 p.m.*	Bedtime
1st	2.5 mg.	0.0 mg.	2.5 mg.	0.0 mg.
2nd	5.0 mg.	0.0 mg.	5.0 mg.	0.0 mg.
3rd	5.0 mg.	5.0 mg.	5.0 mg.	0.0 mg.
4th	5.0 mg.	7.5 mg.	5.0 mg.	2.5 mg.
5th	5.0 mg.	10.0 mg.	7.5 mg.	5.0 mg.
6th	5.0 mg.	15.0 mg.	10.0 mg.	5.0 mg.
7th	5.0 mg.	17.5 mg.	12.5 mg.	5.0 mg.
8th	5.0 mg.	20.0 mg.	15.0 mg.	5.0 mg.
9th	5.0 mg.	22.5 mg.	17.5 mg.	5.0 mg.

*All doses given 30 minutes p.c.

The patients were maintained at that dosage producing the desired response. This has averaged 24.5 mg. daily in this study. The extremes of dosage used were 5.0 mg. daily and 40.0 mg. daily. The drug was given after meals as suggested by Moyer and associates^{1, 2} to allow a more constant and prolonged rate of absorption. The dose given just before the patient retired for the day was kept low as many patients are reported to have weakness and dizziness upon arising in the morning. It has been postulated that this is due to the interstitial shift of fluid which occurs when the patient is supine at night, allowing mecamylamine to re-enter the blood stream. Therefore, when the patient arises in the morning the blood level is higher than on the previous day.¹

Of the 10 patients treated, 3 were males and 7 were females. The average age of the patients was 52 years, with the age range of 40 to 67 years. The average length of time the patients had been on hypertensive therapy prior to this study was 10 months. All of the patients in this study were Negroes. Multiple blood pressure recordings were averaged to give the figures used in table 2.

Results

All of the 10 patients showed some reduction of their mean blood pressure. Seven of the patients had good results meeting the criterion of a reduction of the blood pressure to 150/100, or a fall in the mean blood pressure of 20 mm. Hg. or more. Nine of

Table 2

	<i>Patient</i>	<i>Sex</i>	<i>Age</i>	<i>Average B.P. Before Mecamylamine Therapy</i>	<i>Mean B.P. Before Mecamylamine Therapy</i>	<i>Mean B.P. After Treatment</i>	<i>Dose Mg./Day</i>
1.	N.R.	F	52	206/136	159	146	40.0
2.	K.H.	F	67	200/120	147	121	30.0
3.	S.R.	M	48	220/124	156	131	35.0
4.	L.R.	F	40	230/136	166	149	40.0
5.	M.E.	F	44	180/118	139	121	20.0
6.	L.T.	F	64	216/106	143	139	40.0
7.	C.G.	M	63	220/110	147	139	15.0
8.	D.P.	F	45	246/146	179	151	5.0
9.	F.B.	F	43	190/114	139	107	5.0
10.	O.M.	M	50	210/136	161	139	15.0

the patients in this study reported subjective improvement, such complaints as headaches and palpitation disappearing completely, often before the blood pressure had fallen appreciably. One patient, D. P., was started on therapy with a nonprotein nitrogen of 97 mg. per 100 ml. Approximately 24 hours later she began to have hallucinations, and when seen 48 hours after mecamylamine was begun, the nonprotein nitrogen was 147 mg. per 100 ml. She was then hospitalized and lost to this study.

None of the patients were bothered with ileus since they had been instructed to have a bowel movement every day, by the use of cathartics if necessary.

The mean blood pressure for all of the patients fell from 151 mm. Hg. to 133 mm. Hg. during the 14 weeks covered by this report. Eight of the 10 patients showed satisfactory blood pressure responses. Two of the patients, C. G. and D. P., were lost to the series, one by failing to return after the fourth week and the other through hospitalization.

A significant number (40 per cent) of my patients also described frequent and bizarre dreams. This latter has not previously been described in patients taking this drug.

Conclusions

The results obtained from this limited study would indicate that mecamylamine, when used alone, is a powerful hypotensive agent. As all of the patients in this study

had received other depressor drugs without satisfactory results, even a small mean blood pressure reduction assumes significance.

Unlike most of the previously reported experiences with the use of mecamlamine, the regimen in these patients did not include reserpine. One of the many purposes of this study was to demonstrate the effect of mecamlamine alone. Other workers suggest that administration of reserpine enabled the patient to be controlled on a lower dose of the ganglionic blocking agent.^{1, 2} This was not seen to be true when the average dosages received by their patients were compared with the dosage in this study.

Other workers stress the importance of starting therapy with very low doses (2.5 mg. twice a day). As two of these patients had drops in their mean blood pressure of over 20 mm. Hg. when they received 5.0 mg. per day, larger initial doses may well have been dangerous. It should be noted that most patients had very little drop on less than 15.0 mg. per day. Safety demands starting out with these low doses if the patient is being followed as an out-patient.

Reported experiences indicate that the average daily dose of mecamlamine ranges from 17 to 30 mg.^{1, 3, 7} Such values were obtained with the patient also receiving 0.25 mg. reserpine four times a day.^{1, 2} These values are in agreement with my results in patients not on reserpine.

Summary

1. Ten patients with moderate and severe essential hypertension were treated on an out-patient basis with mecamlamine hydrochloride, a ganglionic blocking agent. This drug is a long acting, completely absorbed, secondary amine, unrelated to the other available blocking agents.

2. Mecamlamine has the same side ef-

fects as the other blocking agents. The hypotension it produces can be combatted by any pressor agent such as norepineprine.

3. The average daily dosage was 25 mg. daily. The dosage should be started at low levels and increased gradually to therapeutic levels.

4. The drug is safe to use on an out-patient basis, and is cheaper than most other agents. It is often effective when other agents have failed to produce the desired effect. It is effective when used alone, or it can be used with reserpine.

5. No study reported to date has been carried out over a long period of time, the average being two and a half to three and a half months.

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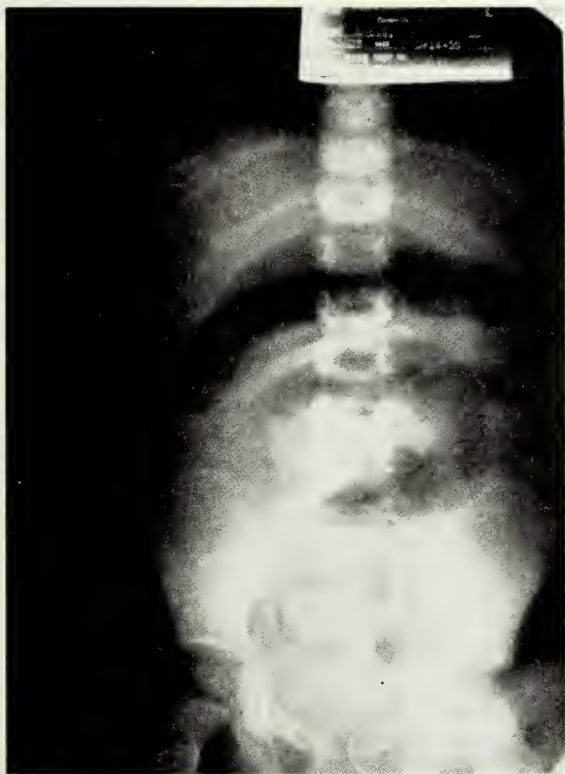
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CASE REPORT

Intestinal Obstruction Due to Massive Infestation with *Ascaris Lumbricoides*

M. M. Young, M.D., Crossville, Tenn.

This is a case report of a three year old child with death due to intestinal obstruction which we felt was caused by a massive infestation with *Ascaris lumbricoides*.



The child was brought to the Uplands Cumberland Medical Center on May 14, 1955, with a history of vomiting and diarrhea of 3 days duration. He had retained very little food for three days prior to admission. Though he had had two or three loose stools daily for two days previously, there had been no stools on the day of admission, a period of about 18 hours. While being admitted to the hospital he vomited several round worms. The parents gave the history that the boy had passed round worms from the bowel intermittently for two or three months previously.

Past medical history was otherwise negative. He had been delivered at home and development had been normal. There had been no illnesses other than fairly frequent upper respiratory infections.

Physical examination at the time of admission revealed an extremely pale, thin, 3 year old child who appeared to be acutely ill. The eyes were sunken. The mucosa was quite pale. There was tachypnea; and the pulse rate was 180. The abdomen was distended and tender to palpation. There were no palpable organs or masses. Peristalsis was present but hypoactive.

Laboratory findings were as follows: Hemoglobin 9.4 Gm.; R.B.C. 3,070,000; WBC 22,750; differential: polys 85%, lymphs 13%, eos. 2%. CO₂ combining power was 59 volumes per cent. Urine was not obtained. A plain X-ray film of the abdomen showed "a bizarre distribution of gas, the pattern having a spiral configuration, pathognomonic of volvulus."

We felt the child had peritonitis. A surgeon was called in consultation. However, the child was too gravely ill to consider immediate operation. We therefore attempted to improve his status by restoring his fluids and electrolyte balance with administration of parenteral fluids and blood. A Levine tube was inserted and oxygen was administered.

The child did not respond to treatment and about 5½ hours after admission began to have convulsions. He died a short time later.

Autopsy was limited to the abdomen. On opening the abdomen it was immediately apparent that there was a large segment of gangrenous bowel. This was found to be the midportion of the ileum, and further investigation revealed a volvulus of this portion of the small intestine. This portion of the bowel appeared to be completely obstructed by large masses of ascaris. Ascaris were also found free in the peritoneal cavity and it was almost certain that the bowel had perforated prior to death.

Gross anatomic diagnosis: (1) Obstruction of small intestine due to helminthiasis (*Ascaris*). (2) Volvulus of small intestine with gangrene and probable perforation. (3) Malnutrition. (4) Anemia.

Pathologic report was as follows: specimen submitted from autopsy May 15, 1955, consists of a portion of the small intestine which measures 30 cm. in length. The lumen of this part of the intestine is distended with many round worms that have obstructed the lumen of the intestine. The outer surface of the submitted portion of the intestine is covered with serofibrinous appearing exudate. Apparently the bowel at the point of obstruction by the group of worms appears to be perforated. Sections are taken through different parts of the wall of the intestine for microscopic study. Also, a section is taken through one of the roundworms for microscopic study.

A portion of stomach accompanies this specimen which measures 4 cm. in length by 6 cm. in greatest width in the open state. The rugae of the stomach mucosa appear grossly normal. Section is taken through the wall of the portion of the stomach for microscopic study.

Tissue from liver consists of an irregular shaped piece of tissue that measures 3 x 2.5 x 2.5 cm. Section is taken from the liver tissue for microscopic study.

Provisional Anatomical Diagnosis: Obstruction of small intestine due to *Ascaris lumbricoides*, with perforation of small intestine and general peritonitis.

Microscopic Study. Sections through tissue from

the liver do not show any significant pathologic changes. Section through tissue from wall of stomach show the serosal layer to be slightly thickened by edema and showing infiltration with lymphocytes and polymorphs. The muscle, submucosal and mucosal layers do not show any significant pathological changes.

Section through the wall of different parts of removed intestines show the mucosal layer to be somewhat necrotic. The remaining, submucosal, muscle and serosal layers are thickened by edema and contain diffuse infiltration with polymorphs and lymphocytes and in some areas an extravasation of red cells is present. There is no evidence of malignancy or tuberculosis.

Diagnosis. Obstruction and perforation of small intestine by a mass of round worms (*Ascaris lumbricoides*).

Anatomical Diagnosis. Obstruction of small intestine due to *Ascaris lumbricoides* with perforation and general peritonitis. Volvulus of small intestine due to obstruction of ileum by *Ascaris lumbricoides*. General peritonitis. Malnutrition. Dehydration.

Summary

This report represents an end result of a massive intestinal parasitic infestation which is rarely seen and, to my knowledge, has not been reported in this country. Such cases have been reported from Central and South America and other parts of the world. It serves to remind us, however, of the possible seriousness of intestinal parasitic infestation in children.

Early Use of Anticoagulants in the Treatment of Myocardial Infarction. Irving S. Wright, J.A.M.A. 163:918, 1957.

The mortality rate of acute myocardial infarction may be reduced from one-third to one-half by the proper use of anticoagulant drugs. Of only slightly less importance is the striking reduction in thromboembolic complications which autopsy studies indicate occur 2-3 times as often as they are suspected clinically. The author believes, therefore, that anticoagulant therapy should be used in all patients with definite acute myocardial infarction, provided there are no specific contraindications and adequate laboratory control facilities are available.

Some investigators hold that many cases may be classified, when first seen, as "good risks" in whom anticoagulant therapy is contraindicated because the risk of hemorrhagic complication inherent in its use exceeds the risk of thromboembolism without it. The author questions the validity of this stand. He feels that its proponents overestimate the danger of hemorrhage in the presence of adequate laboratory control, especially now that phytonadione (vitamine K₁) is available, and that they underestimate the frequency and potential seriousness of emboli from mural thrombi. He also suggests that their criteria for diagnosis of myocardial infarction are more

Liberal than those of others and that their series therefore contain questionable cases which others would have excluded and which would naturally carry lower complication and death risks.

No one anticoagulant is distinctly superior to all the others. A suggested regimen is an initial dose of 200-300 mg. of bishydroxycoumarin (Dicumerol) with daily maintenance doses of 25-150 mg. (average 75 mg.). This is usually adequate to maintain a desirable therapeutic effect (prothrombin time 22-35 seconds with a control of 15 seconds by the Quick one-stage method). A more rapid therapeutic effect may be achieved by giving 1200-1500 mg. of ethyl biscoumacetate (Tromexan) with the initial dose of bishydroxycoumarin. If immediate onset of anticoagulant effect is necessary, a subcutaneous injection of 75-100 mg. of heparin sodium should be given simultaneously with the initial combined oral doses of bishydroxycoumarin and ethyl biscoumacetate. The heparin sodium is then repeated in 12 hours. Excessive prolongation of the prothrombin time (over 60 seconds) with mild or no bleeding may be controlled by 10-20 mg. of phytonadione (vitamin K₁) in 3-6 hours. The tablet form for oral administration is practically as satisfactory as the intravenous preparation. (Abstracted for the Middle Tennessee Heart Association by C. C. Woodcock, M.D., Nashville.)

STAFF CONFERENCE

Vanderbilt University Hospital* Paroxysmal Nocturnal Hemoglobinuria

DR. CONRAD ARKEMA: J. W. B., (VUH No. 265305) a 56 year old white farmer was admitted to the Vanderbilt University Hospital for the first time on February 4, 1957 complaining of weakness of several months duration.

Present Illness: Two years prior to admission while riding as a passenger on an overnight truck trip, he experienced some malaise and noted that his urine became dark brown. The urinary abnormality persisted for about one week. A similar episode occurred several months later. At this time the urine was even darker, almost "Coca-cola" in appearance, the dark color being particularly obvious in the first morning specimen. The episodes have recurred at intervals of several months and were usually preceded and followed by a feeling of malaise.

The patient also noted frequent episodes of cramping sensations in the thighs and calves of both legs. Five months prior to admission he developed several painful skin lesions on his right thigh and one over the internal malleolus on the right. These lesions were apparently bullous and contained red fluid. They were approximately 2 cm. in diameter and elevated 1 cm. Subsequently they regressed but left superficial scars and bled easily following even slight trauma.

During the 2 months prior to admission there was a mild intermittent jaundice not definitely related to any alterations in the color of the urine. One week before admission the patient experienced another episode of dark urine and dull aching pains in both flanks which persisted until hospitalization. The past and family histories yielded nothing of significance.

Physical Examination: Examination revealed a well developed and nourished white male in no acute distress. The patient appeared pallid and slightly jaundiced. The vital signs were not remarkable. There were a cluster of four round, superficially scarred skin lesions on the upper anterior thigh, each individual lesion measuring about 2 cm. in diameter. There was a single such lesion over the right internal malleolus. One of these lesions was biopsied and revealed chronic inflammatory tissue. The only other significant finding was that the tip of the spleen could be felt on deep inspiration.

Laboratory Examination: The urine at the time of admission was dark brown and yielded a 4+ guaiac test for blood. Specific gravity was 1.013, pH 5.5, and protein 3+. No bile was present in the urine. A few white cells were seen in the

urinary sediment. No intact red cells were seen. Within several days the urine became entirely normal. The white count was 3100. The differential count was not remarkable except for the presence of 1.5% differentiated myelocytes. Platelet count was 60,000. The volume of packed red cells was 25%. The MCV was 120, MCH 38, and MCHC 32%. The reticulocyte count was 8.0%. The clotting time and capillary fragility tests were normal. Clot retraction was moderately impaired. Bleeding time was 10 minutes. The prothrombin time and prothrombin utilization test were normal. Osmotic fragility tests on both fresh and incubated red cells were within normal limits. Mechanical fragility was normal. No circulating or absorbed red cell antibodies were detectable.

The L. E. cell and Coombs tests were negative. The NPN, blood sugar, serum electrolytes, and liver function tests were all within normal limits. On admission the bilirubin was 0.4 mg.% direct and 1.4 mg.% indirect. By the fifth hospital day this had fallen to 0.2 and 0.6 respectively. Bone marrow aspiration revealed a striking increase in the proportion of erythroid cells. Chest X-ray, G.I. series, intravenous pyelogram, skull X-ray, and a roentgenographic bone survey were all within normal limits.

Hemosiderin (both extra- and intracellular) was present in large concentration in the urine. The serum iron concentration was 159 mcg.%, the iron-binding capacity 400 mcg., and the percent saturation 28. The stool showed 2300 Ehrlich units per 100 grams on admission and subsequent ranged from 400 to 700. The "heat test" was strongly positive. The plasma hemoglobin was 20 mg.% (normal 0.5 mg.%). The Ham (acid hemolysin) and Crosby (thrombin) tests were strongly positive. Spectroscopic examination of the plasma revealed the presence of some methemalbumin.

DR. ROBERT HARTMANN: Paroxysmal nocturnal hemoglobinuria has often been called the Marchiafava-Micheli syndrome with credit given to the former investigator for initial description of this disease in 1911. However, as Crosby has pointed out, Strübing accurately described this disorder in 1882. This is an unusual disorder, there being only 190 cases described to date. Until the year 1948 only about 60 cases were described, emphasizing increasing recognition and interest in recent years. Although this disease is somewhat infrequent in occurrence, it provides a most fascinating tool for investigation of red cell defects and the manner in which the body handles and excretes hemoglobin released freely into the plasma.

Paroxysmal nocturnal hemoglobinuria (PNH) is most frequently seen between the

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ages of 30 to 50 years but has been recorded both in old age and in very young children. That this disorder is not hereditary in nature is underlined by its occurrence in but one of two identical twins. Recent contributions to the clinical picture of this disorder have included the recognition that it is not necessarily characterized by obvious paroxysms of nocturnal hemoglobinuria. It is true that in some such cases biochemical determinations will reveal increased hemolysis during sleep. However, in other patients during periods of relative inactivity of the disorder there may not even be a biochemically detectable diurnal variation.

Severe transfusion reactions may be the presenting problem. Not infrequently the patient may give a history of repetition of the following train of events: symptoms of anemia, transfusion for the anemia, severe reaction to the transfusion, gradual improvement within a period of a week, period of well being for 4 to 6 weeks until the symptoms of anemia recur. Another transfusion will then repeat the cycle of these events.

The defect clearly resides in the patient's red cells and not in his plasma. However, certain plasma components are necessary for the hemolytic reaction. In addition, lowering the pH *in vitro* characteristically brings out the defect, and perhaps some mild changes in pH *in vivo* may also play an important role. A complicated system of accelerators and inhibitors has been hypothesized. In addition the hemolytic reaction may be related to the blood coagulation system. Initially it was thought that accelerator globulin was a critical factor for the reaction. More recently the emphasis has shifted to thrombin which is thought to accelerate the hemolytic process by antagonizing a stable inhibitory factor. Others feel that properdin is vitally concerned with this reaction and that the role attributed to thrombin is merely due to the contamination of the latter with properdin. Although initially complement was incriminated in the hemolytic system, more recent work suggests that such is not the case.

The appreciation of the complex system of various plasma substances required for this reaction is important in understanding the clinical picture. Indeed, the intermit-

tent nature of the clinical picture may be related to depletion of some of the necessary plasma components during a severe reaction. Furthermore, there may be a widely varying proportion of sufficiently sensitive cells in the given patient. These may be destroyed during the active phases of the disease. The disease process may be much less active during the time required to build up a sufficient proportion of more sensitive cells.

Marchiafava's term, "chronic hemoglobinemia and hemosiderinuria," deserves emphasis. In a period of relative inactivity an elevated plasma hemoglobin concentration may be the only metabolic defect readily discernable. It has been stated that some patients are even free of hemosiderinuria for prolonged periods of time.

The relationship to sleep is a fascinating one. Intravascular hemolysis is likely to be more pronounced during sleep even when the patient is made to sleep during the day and kept awake at night. Posture seems to have little influence since prolonged rest in a given position but with the patient awake does not influence the hemolytic process. It has been attractive to postulate that in certain vascular channels of the body there may be an appreciable accumulation of CO_2 during sleep and that the resulting mild acidosis may initiate the hemolytic process. While the pH of the serum often must be lowered beyond physiological limits in order to demonstrate hemolysis *in vitro*, Wagley has shown that on critical testing very slight reduction of the pH below 7.4 can bring about increased hemolysis *in vitro*. On the other hand the act of sleeping in a Drinker respirator adjusted to "wash out CO_2 " has not abolished the hemolysis. It has also been suggested that during sleep there may be increased thrombic activity in the blood.

Another recent development has been the wider recognition that the white cells and blood platelets likewise are abnormal in this disorder. Commonly there is both leucopenia and thrombocytopenia. Indeed, the presenting picture may mimic aplastic anemia. The bone marrow typically is quite cellular but at times may be hypocellular. Under such circumstances the recognition of a moderate reticulocytosis

may be the first clue to suggest the possibility of a disorder largely hemolytic in nature. Indeed, for the degree of anemia, the reticulocytosis is often not as proportionately great as expected in most hemolytic disorders. Even when the marrow is cellular, its compensatory capacity may be subnormal. The use of the screening "heat test" in more cases of seeming aplastic anemia or so-called "hypersplenic" states may lead to more frequent recognition of paroxysmal nocturnal hemoglobinuria. The defect in the white cells is also underlined by the finding of an abnormally low alkaline phosphatase content in these cells.

Despite the thrombocytopenia, clinical purpura and bleeding is unusual. Contrariwise, these patients frequently suffer from thrombotic disease. Whether this is due to platelet abnormality, red cell stroma free in the circulation, or some other mechanism is not known. The peculiar skin lesions in our patient could be the result of thromboses. The repeated episodes of aches and pains in the extremities could also be the result of such a process. No other explanation is readily apparent. I am aware of only one previously documented case of PNH with skin lesions on the extremities. In this previous case, however, the leg ulcers may have been secondary to a simple phlebitis occurring in the last trimester of pregnancy.

Of prime importance in the management of these cases is their great sensitivity to many agents and medications whether given orally or parentally. The frequent sensitivity to infused plasma is well known. Indeed, this forms the basis of the recommendation by Dacie and others that such patients be given only red cells which have been freed of plasma by repeated washing in physiological saline solution. Perhaps, the infusion of normal plasma provides a fresh supply of various plasmatic components necessary for the reaction. In addition PNH patients have been sensitive to Evan's blue dye, nitrogen mustard, liver extract, nicotinic acid, intravenous typhoid vaccine, and many other agents. Both sodium bicarbonate and ammonium chloride have produced reactions. In some situations these reactions could be due to the production of a mild acidosis but the precise

mechanism is unknown. In addition PNH red cells are extremely sensitive to many red cell antibodies. Consequently such patients should never be given group O blood as "universal donor" blood. Indeed, Dacie has used PNH cells as sensitive indicators for the presence of antibodies in the plasma of other patients. Diamox was recently given to a PNH patient because of a steroid-induced Cushingoid state, and as could be anticipated from the mild acidosis Diamox may produce, the patient suffered a severe hemolytic reaction. The practical value of these observations has been pointedly made by Crosby in his quotation, "He prescribes best who prescribes least."

In most hemolytic anemias it is thought that the actual red cell destruction occurs following the ingestion of the damaged or effete red cell by reticulo-endothelial cells. In contrast PNH belongs to the group of disorders in which there is direct breakdown of the red cells within the bloodstream releasing free hemoglobin. The renal threshold for hemoglobin is approximately 100-120 mg.%. The classical theory has been that hemoglobin filters freely through the glomerulus and that unless the above concentration is exceeded, the hemoglobin is secreted back into circulation by the tubular cells. A somewhat more attractive hypothesis has been recently advanced by Laurell. This concerns the concept that an alpha-2 globulin, "haptoglobulin," is the hemoglobin binding protein in the circulation. Only when this substance is saturated will hemoglobin allegedly pass through the glomerulus and into the urine. This concept does not necessarily preclude the role of the tubular cell as well. In hemolytic transfusion reactions once the renal threshold has been temporarily exceeded, the threshold on the descending slope of the curve of hemoglobin concentration may fall to 30-50 mg.%. Laurell's hypothesis offers a neat explanation for the fact that the renal threshold for hemoglobin in PNH may be as low as 20 mg.%. Presumably, this would be a reflection of a state of chronic depletion of the hemoglobin binding protein, "haptoglobulin."

In most hemolytic anemias the reticulo-endothelial system is heavily laden with hemosiderin. However, in PNH the kid-

neys are selectively laden with iron and the reticulo-endothelial system is relatively free of hemosiderin. Prior to the frequent use of transfusions it was reported that PNH patients could develop iron deficiency in the reticulo-endothelial system and other portions of the body while the kidneys remained heavily laden with iron. However, with the advent of the frequent use of transfusions the reticulo-endothelial system is now commonly saturated with iron from these sources. Our patient who had never been previously transfused had a normal serum iron concentration and normal per cent saturation of the iron-binding protein.

It is remarkable that despite the heavy deposition of hemosiderin in the kidneys, renal function remains good. Proteinuria during the hemolytic crisis has been indicated as evidence of renal damage, but it should be remembered that hemoglobin itself gives a positive test for protein in the urine. Certainly during interval periods of less activity there has been no consistent proteinuria and renal function has remained good. Perhaps this is associated with the amazing capacity for regeneration on the part of the tubular cells. Those tubular cells heavily laden with iron may be jettisoned and replaced by a new and presumably well functioning cells.

A few words should be said about the diagnostic procedures involved. A peripheral pancytopenia with a cellular or occasionally hypocellular marrow is a common finding. Therefore, this disorder should be thought of in patients presenting with seeming "hypersplenism" or aplastic anemia, particularly if there is a reticulocytosis even though a seemingly inadequate one. Careful inquiry regarding the appearance of the morning urine and subsequent urines during the day is essential, but such a history may be lacking. Definite and gross hemoglobinuria on arising and its subsequent striking clearance in repeated hourly specimens provides strong presumptive evidence for the diagnosis of PNH. The finding of an abnormally elevated plasma hemoglobin which is even higher at 8:00 a.m. than at 8:00 p.m. is also excellent evidence. However, the latter test is not necessarily regularly available and during certain intervals the patient may show no appreciable

difference in morning and evening plasma hemoglobin concentrations.

Perhaps the best screening test is the so-called "heat test" of Haeglein and Maier. Several ml. of carefully drawn sterile blood are placed in each of two sterile tubes. Preferably the blood should be drawn in sterile oiled or silicone-treated syringes. The tubes are stoppered and one is placed in the water bath at 37° and the other in the refrigerator. At the end of about 6 hours the tubes are removed, the clots gently reamed to avoid artificial hemolysis, and the tubes are then centrifuged. It is important to remember that in the presence of a rapid sedimentation rate the clotted supernatant plasma may appear clear. Under such circumstances the hemolysis has taken place within the clot itself where the cells are in contact with the plasma. For this reason careful reaming of the clot and centrifugation is essential. The positive test consists of *striking* hemolysis in the serum from the blood that was incubated at 37° C compared to that incubated in the refrigerator. It should be remembered that this test is not absolutely pathognomonic for PNH but may also be positive in hereditary spherocytosis, in certain toxic hemoglobinurias and conceivably when a very potent warm agglutinin is present in the serum. However, these disorders can be readily eliminated on other grounds.

Hemosiderin occurs in small amounts in the urine in many hemolytic disorders, but its presence in large amounts is virtually confined to the intravascular type of hemolytic anemia of which PNH can be considered the prototype. A simple test for hemosiderin is the use of the classical Prussian blue reaction. To the urine sediment obtained from approximately 10 ml. of urine are added approximately 5 ml. each of 2% potassium ferrocyanide and of N/3 HCl. The contents are mixed and incubated at 37° for 10 or 15 minutes. At the end of this period the tube is centrifuged, the supernatant removed and the sediment examined for the presence of hemosiderin. In PNH the supernatant frequently shows a dark blue color. The sediment will commonly be grossly stained dark blue or even black. On microscopic examination both intracellular and extracellular

bluish-black granules can be seen. It is important to find these granules within the renal tubular cells since the presence of a few extracellular granules could be associated with inadvertent contamination with iron. Ideally the reagents for this test should be made with iron-free water. This can be readily obtained with the use of inexpensive, commercially available plastic bottles containing iron exchange resins and of the type which are used for softening water for use in steam irons.

The Ham and Crosby tests are more specific. In these tests 10% saline suspensions of thrice washed red cells both from the patient and from a normal subject of the same blood group and type are used. One ml. portions of the suspension are centrifuged and the supernatant saline removed. This is mandatory since dilution with the saline may abolish the reaction. The serum is obtained from both the patient and the control. Portions of the serum can be acidified by the addition of 10% by volume of N/3 HCl to reduce the pH to about 6.8. A nicety is the availability of pH paper as a check. In addition to a portion of this acidified serum a thrombin solution containing 500 units per ml. should be added at 10% by volume concentration (final concentration about 50 units of thrombin per ml.). To the packed patient's cells are then added 1.0 ml. portions of patient's untreated serum, acidified serum, and acid-thrombin-serum. In addition, control's untreated and acidified serum are also tested against the patient's red cells. In appropriate controls the patient's serum both untreated and acidified are set up against control's packed cells. Contents of the tubes are gently mixed and then incubated for two hours at 37° C. A positive Ham test is indicated by the presence of hemolysis in tubes containing the patient's cells. This hemolysis may occur in either patient's serum or control's serum but in each case is accentuated or actually brought about by the acidified serum. A positive Crosby test is indicated by the fact that thrombin brings out the reaction more strongly. It has been claimed that the Ham and Crosby tests may be negative immediately following periods of great activity or crisis because of exhaustion of necessary plasmatic factors or possibly of

the more sensitive red cells in the patient's blood. In our present patient immediately following a hemoglobinuric crisis the Ham test was negative with 2 hours incubation but strikingly positive at 6 hours incubation at 37°. This suggests that immediately following the crisis some of the previously reported negative tests may have been due to lack of sufficient incubation. However, in other patients we have noted that even a 6 hour incubation may yield a negative test during an interval following a severe hemolytic reaction.

The treatment of this disorder remains difficult. Indeed, there is no very specific treatment. Careful transfusion with red cells that have been washed 3 to 5 times in normal saline, while perhaps not necessary in all cases and at all times, is certainly a counsel of perfection. Because renal shutdown has occurred following reactions to transfusions of whole blood, ideally washing the cells is indicated in all cases.

In most patients the spleen is not palpable. While splenectomy may influence the diurnal variation in the hemolytic process, it is not curative of this disorder. Furthermore, there has been a 25% mortality in patients subjected to splenectomy. Frequently this has been associated with disastrous thrombotic episodes such as thrombosis of the entire portal system or massive cerebral thrombosis. Therefore, splenectomy is procedure to be avoided in such patients. Indeed, when splenectomy is contemplated in a patient with an obscure "aplastic anemia" or "hypersplenic" state, a "heat test" probably should be performed to rule out the possibility of PNH.

Adrenalin may temporarily abort the hemolytic reaction but this is of only theoretic interest. The effect is short-lived and frequently followed by severe hemoglobinuria. Although in large concentrations heparin inhibits the hemolysis *in vitro*, its clinical use has been followed by increased hemolysis and in one case rather catastrophic results. Protamine sulfate likewise has been found to produce unfavorable reactions. Alkalis may have some temporary beneficial effect, but maintenance therapy is unsatisfactory, perhaps because other mechanisms compensate for the induced alkalosis. Of more practical concern is that

even the omission of but one dose of the alkali has been followed by severe reactions.

Dicoumarol medication has yielded interesting findings. On several occasions rather striking remissions were obtained, and it is of fundamental significance that even the white cell and platelet concentrations rose to normal during this therapy. However, dicoumarol is not regularly effective, and it might be said that even its greatest proponents are not very enthusiastic. If there is an indication for dicoumarol, it is probably in those patients experiencing repeated major thrombotic episodes.

By and large the steroid hormones have had no appreciable influence on this disorder. Furthermore, with the high incidence of peptic ulcer and thrombotic tendency in PNH, steroids are at least theoretically contraindicated. There is some suggestive but by no means conclusive evidence that the steroids may in themselves produce an increased tendency to thrombosis. In essence one may again say that "He prescribes best who prescribes least."

For the sake of completeness it should be noted that recently rather bizarre complications and atypical cases have been described. Association with auto-immune hemolytic anemia (positive Coombs test), circulating hemolysins, and myelofibrosis have been noted. Superficially these cases may be disturbing regarding the basic nosology of PNH. In most cases with complicating auto-immune hemolytic anemia (positive Coombs test) this was but a passing phase during a long course of PNH. These atypical cases should not be disturbing when one recognizes the concept of Crosby that the disorder of PNH represents a widespread basic defect in the reticulo-endothelial system, probably in stromal proteins. It is readily understandable that under such circumstances many complications seen in other disorders of the reticulo-endothelial system might readily be seen in PNH.

DR. HUGH MORGAN: What is the usual

course of the disease in the average patient?

DR. HARTMANN: This is a somewhat difficult question to answer because not many individual investigators have seen large numbers of these patients and the documented protocols in the literature may cover but a short span of time. To hazard a guess the patient presented today probably gives us a relatively average picture of the course of the disease. This is by no means a rapidly fatal disorder. Indeed, if treated wisely and conservatively, I would guess that the average patient should be able to live a relatively normal lifespan with occasional hospitalizations. The occurrence of obvious hemolytic crisis at intervals of 2 to 4 months is probably average for this disorder. In the interval periods of less activity of the disease the average patient is probably moderately anemic, and mild to moderate jaundice may be present intermittently. In the occasional patient moderate jaundice may be fairly constant. There is a suggestion that in some patients the disease process may ameliorate greatly with time so that virtually no attacks of hemoglobinuria occur, and the anemia is relatively mild and compatible with normal daily activities of the average middle aged American.

Bibliography

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ADDENDUM: Recently we have seen three other cases of paroxysmal nocturnal hemoglobinuria. Two of these patients were Negroes, a somewhat unusual finding. One of the Negro patients had bilateral ankle ulcers. Hemoglobin electrophoresis revealed no sickle or other abnormal hemoglobin. Perhaps the ankle ulcers were associated with the alleged tendency of the Negro to develop such in the presence of any hemolytic process.

CLINICOPATHOLOGIC CONFERENCE

Kennedy Veteran's Administration Hospital

Primary Fibromyxoma of the Heart

F. H. Knox, Jr., M.D. and J. M. Young, M.D.*

Case Presentation

This 72 year old white male was first examined 2 years prior to death. He consulted his local doctor because of pleuritic pain of one day's duration. There was a pleural friction rub over the left chest, laterally, but the lungs otherwise were clear. B.P. was 130/80. The heart was not enlarged and no murmurs were present. On fluoroscopy, however, an ovoid moving shadow was noted near the left border of the heart. An EKG was reported normal. His pleural pain disappeared in several days and he became asymptomatic.

About a year later he was seen again for a "check-up." B.P. was 140/80. There was moderate nodular hyperplasia of the prostate. He had a slight upper respiratory infection.

About 10 days prior to death the patient was in an automobile accident but suffered only minor cuts and bruises. He developed soreness and pain on coughing in his left chest several days later and reported for examination. He was somewhat short of breath.

Physical Examination. The patient was slightly dyspneic at rest. T., P., R. were normal; B.P. was 120/80. There was no distension of the neck veins or cyanosis of the nail beds. The left chest on inspection showed restricted motion and there was dullness to percussion and absence of breath sounds at the base, felt to be indicative of pleural effusion. An X-ray disclosed a minimal pleural effusion, and the heart was felt to be slightly enlarged. The remainder of the examination was not remarkable.

Laboratory. Hgb. was 11.7 Gm., RBC 4.7 million, WBC 8190 with 79% polys. N.P.N. 34 mg.%; urinalysis was negative; B.M.R. was +4.

EKG. An EKG 2 years prior to death was reported normal; one 10 months before death was read as probably abnormal with slight ST-T changes. Two days prior to death a tracing was interpreted as "non-specific abnormal tracing consistent with myocardial disease."

Course. The pleural effusion quickly disappeared with rest and the patient was discharged asymptomatic after 3 days in the hospital. He died suddenly in his sleep 2 nights later.

Note. After the death of the patient, the family

apologetically volunteered that for 10 years the patient had had occasional momentary "blacking out" spells during the daytime. Apparently he had also had three grand mal seizures during the ten year period and had been taking dilantin and phenobarbital.

Clinical Discussion

DR. F. H. KNOX: According to the protocol, this patient, at approximately 62 years of age, began to suffer occasional momentary blackout spells during the daytime. There is also history of three probable grand mal seizures during the ten year period preceding his admission to the hospital. He had been taking Dilantin and phenobarbital. Other than this, he apparently did well until age 70 when he complained of pleuritic pain, and at that time a pleural friction rub was heard. The pleuritic pain developed again two years later, following an automobile accident, along with some shortness of breath. Shortly after this, the patient died via a mechanism of sudden death.

Significantly, at age 70, the heart was normal in size, there were no murmurs, the blood pressure and EKG were normal. A year later, the findings were the same except that the EKG was read as probably abnormal with slight S-T and T changes. Ten days before his death, examination revealed some shortness of breath, pleurisy, no evidence of congestive failure, with a heart that was felt to be slightly enlarged, by X-ray. Two days before death, the EKG revealed nonspecific abnormal findings consistent with myocardial disease.

After an apparent uneventful course of several days in the hospital, the patient died suddenly in his sleep. Any diagnosis will have to explain: (1) bouts of syncope for approximately ten years; (2) pleurisy and pleural rub; (3) a heart that apparently was not significantly involved organically until extremely late in life; and (4) sudden death.

I shall attempt to arrive at a diagnosis by a consideration of the causes of syncope, the causes of sudden death, and facts from the history, giving both positive and negative information.

First, let us consider the momentary blackout spells and the three apparent grand mal seizures sustained by the patient during the last ten years of his life. Were

*From the Cardiology Section of the Medical Service and the Laboratory Service, Veterans Administration Hospital, Kennedy Division, Memphis, Tennessee.

these the result of true epilepsy, or were they actually syncope?

While it is written that epilepsy may occur at any time of life, the occurrence of epileptic type seizures in an older individual should direct attention toward brain tumor, vascular degeneration of the brain, or heart disease with the Stokes-Adams syndrome, as well as true epilepsy. Brain tumor can be reasonably well ruled out on the basis of the duration of the patient's episodes of blackouts and the apparent lack of neurologic manifestations, or progression of such manifestations. I feel that the presence of significant vascular degeneration of the brain may be dispensed with on the basis of no apparent significant progression, no noted obvious evidence of senility disproportionate to the patient's age, and the lack of history of even a mild cerebrovascular accident during the 10 year period preceding death. This leaves for discussion the Stokes-Adams syndrome of which more will be said later.

I do not believe that this man's episodes represent a true epilepsy, but rather were syncopal attacks for the following reasons. First, epilepsy may occur day or night and regardless of the patient's positions. The episodes experienced by this patient occurred only during the daytime, apparently when he was up and about. Second, it would seem more than a coincidence to me that during a ten year period none of his so-called blackout spells occurred at night. It is to be mentioned that at the beginning of an attack of syncope the patient is nearly always in the upright position, either sitting or standing. Third, epilepsy is sudden in onset and if an aura is present it rarely lasts longer than a few seconds before consciousness is abolished. The onset of syncope is more deliberate and is preceded by prodromes which enable the patient to lie down to protect himself before he slumps. Injury to these people is exceptional. Excluding the so-called grand mal seizures this patient's episodes are described as momentary. Syncope is characterized by abrupt onset, brief duration, and complete recovery within a few minutes, while the headache, drowsiness and sleep following an epileptic attack are characteristic. Fourth, injury and loss of sphincter control are usual with

epilepsy and rare with syncope. If either of these had been a problem, it would seem reasonable to expect the patient to mention them, or the doctors to have elicited such historical events, in which case they would have been mentioned in the protocol. It strikes me that the patient's episodes were of syncope rather than epileptic in origin. Syncope, or fainting, consists of a sudden loss of consciousness due to cerebral anoxia. Convulsions may occur if the cerebral anoxia is severe enough.

If it is accepted as fact that the patient suffered syncopal attacks, then what was the mechanism that produced these episodes? Syncope may be produced in many ways. There may occur: (1) simple syncope; (2) syncope due to hyperactive carotid sinus; (3) syncope the result of orthostatic hypotension; (4) that due to cardiac origin, or the Morgagni-Adams-Stokes syndrome; and (5) syncope due to other causes as with hypoglycemia, severe anemias, polycythemia, Addison's disease, injury to the head, internal hemorrhage, certain drugs, hyperventilation, hysteria, cor pulmonale, and tetralogy of Fallot.

Simple syncope occurring as the result of sudden pain, fright, or sight of blood to my mind, has no bearing in this case.

Insofar as syncope resulting from a hyperactive carotid sinus, there is given no direct history indicating such a condition, such as the episodes being precipitated by sudden turning of the head to the side or upwards, precipitation of syncope by wearing a tight collar, or with shaving. Also, it does not seem reasonable that this condition would not have been eliminated prior to placing the patient on medication. However, it is possible that a hyperactive carotid sinus could exist here as part of a generalized arteriosclerosis in an individual of this age, possibly associated with arteriosclerotic heart disease, which may cause sudden death. However, I am not impressed with a hyperactive carotid sinus as the cause of this man's difficulty.

There are three types of orthostatic hypotension which may cause syncope. There exists orthostatic hypotension with normal vasomotor reflexes, which is the most common type; there is that due to impaired or absent vasomotor reflexes, which is rela-

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Legislative Wind-up

● The 80th Tennessee Legislature, in session since early January, 1957, will have adjourned by the time that you receive this issue of the JOURNAL. During the session, approximately 1,000 bills were introduced in the two Houses. This number of bills compares with previous years as the session has been an unusually heavy one.

TSMA Groups Active

● This was one of the busiest legislative sessions in modern years as a number of bills of particular interest to the medical profession were introduced. To every possible extent, both Houses were covered by the Executive Secretary and other headquarters staff personnel. In addition, the Legislative Committee Chairman, other members of the Committee and key members of the Association appeared before legislative committees for hearings on certain bills.

Doctors Back Home Effective

● Several times during the Legislative session, it was necessary to call upon doctors for emergency contact work on the home front. The cooperative efforts paid off greatly. As a result of the coordinated efforts of all, close liaison was maintained with members of the Legislature and the Association was successful in passing all of the bills that were proposed by the Tennessee State Medical Association's legislative program, and no major health or medical bill opposed by the State Medical Association was enacted into law.

TSMA Activity Moves To New High

● Activities of the Association have reached a new high. During 1956 and continuing into 1957, more activities, meetings and other business was being expedited than ever done previously. There have been more committee meetings and activity has been above the normal expected. Included in additional services and activities was the County Society Officers Conference, extra committee meetings, legislative action, additional Board of Trustee meetings, the Polio immunization program, Medicare, the annual meeting, and the demands of many special services required by the membership and expanded program of the Tennessee State Medical Association.

Highlights in the Medicare Program

● Your attention is called to several basic items embodied in Public Law 569 - 84th Congress and more commonly known as "Medicare."

1. **FREE CHOICE OF PHYSICIAN:** Dependents are to have free choice of any licensed physician who is legally qualified to prescribe and administer all drugs and to perform all surgical procedures.
2. **RIGHT OF PHYSICIAN TO CHOOSE PATIENT:** While it is hoped that all physicians will participate in the program, the contract reserves the right of any physician to decline to participate or to refuse any individual case without stating a reason therefor.
3. **PHYSICIANS' FEES:** The Medicare program is a full-service plan and physicians should thoroughly familiarize themselves with the information in the Doctor's Manual and the Fee Schedule which has been distributed to all doctors in the state.

Medical Services Provided Under The Law

● (1) **WHILE IN A HOSPITAL:** Treatment of acute medical conditions, treatment of surgical conditions, obstetrical and maternity care. Emergency treatment by the physician in a

hospital of acute emergencies of any nature which are a threat to life, health or well-being of the patient including acute emotional disorders. Also, care of contagious diseases covered. (2) OUTSIDE OF THE HOSPITAL: Care by a physician prior to and following hospitalization for a bodily injury or other surgical operations by the physician. This includes the treatment of fractures and dislocations. Obstetrical and maternity care may be rendered anywhere.

Financial Statement

● The following financial statement will give a concise picture of the financial activities of the Association for the year 1956. The report is taken from the Annual Audit made by the firm of Grannis & Associates, Certified Public Accountants of Nashville, Tennessee.

TENNESSEE STATE MEDICAL ASSOCIATION Statement of Receipts and Disbursements Year Ended December 31, 1956

GENERAL FUND

RECEIPTS

Dues.....	\$58,557.50
American Medical Association Dues.....	55,200.00
Journal Advertising.....	26,796.80
Exhibit Rental.....	7,025.00
Property Rental.....	1,375.00
Subscriptions A.M.A.....	110.00
Collection Fee	
A.M.A. Dues.....	563.13
Payroll Taxes deducted from Employees.....	3,791.60
Expense Refunds.....	3,847.01
Miscellaneous Income.....	259.05
Total Receipts.....	\$157,525.09

DISBURSEMENTS

General Expenses

Journal Printing and Distribution.....	\$21,105.60
Editor and Assistants...	3,600.00
Staff Salaries.....	16,033.36
Travel.....	1,116.21
President's Expense.....	861.95
Building Expense.....	1,509.38
Telephone & Telegraph...	536.39
Postage.....	383.00
Printing.....	571.60
Stationery, Supplies, Etc.....	709.13
Clipping Service.....	174.41
Audit.....	351.78
Treasurer's Honorarium..	100.00
Fidelity Bonds.....	125.00
Committee Expense.....	1,093.91
Board of Trustees.....	134.50
A.M.A. Delegates.....	1,633.81
Conference of Presidents—S M A.....	75.00
Annual Meeting.....	6,258.80
Attorney Fees.....	2,500.00
Payroll Taxes.....	262.55
Miscellaneous.....	204.42
County Officers Conf....	377.71
Office Rent (Old Location).....	125.29

Total Gen. Disbursements \$59,843.89

PUBLIC SERVICE EXPENSES

Staff Salaries.....	\$ 9,175.00
Travel.....	2,652.04
Building Expense.....	1,006.26
Telephone & Telegraph...	901.72
Postage.....	417.83
Printing.....	557.98
Stationery, Supplies, Etc.....	506.89
Rural Health Conference.	200.00
Annual Meeting.....	400.31
Health Project Contest..	471.74
Payroll Taxes.....	139.50
Television Programs.....	62.78
Miscellaneous.....	144.00
Rent.....	83.53
Public Relations Course.	197.40
Movie Productions.....	1,658.83

Total Pub. Serv. Expenses. \$18,576.21

OTHER PAYMENTS

A.M.A. Dues Remitted....	\$55,200.00
Payroll & Withholding Taxes Remitted.....	3,783.46
Capital Improvements....	2,117.86
Income Refunds.....	191.19
Note Payments (Building)..	21,583.73
Transfer Building Fund..	245.07

Total Other Payments..... 83,121.31

Total Disbursements.....\$161,541.41

Excess of Disbursements

Over Receipts.....\$ 4,016.32

Public Service

THE TENNESSEE TEN

H. J. R. 54



Dave Warwick and Jack Drake look on as Charlie Moffitt and Governor Frank G. Clement examine the Certificate of Merit presented to the Knoxville Jaycees by the Public Service Committee of TSMA.

● Governor Frank G. Clement's signing of House Joint Resolution No. 54 coincided with the presentation of a Certificate of Merit by the Public Service Committee to representatives of the Knoxville Junior Chamber of Commerce. The resolution, sponsored jointly by Knox County Representative Doyle King and House Speaker James Bomar, urged all Tennesseans under forty to receive their Salk immunization. The certificate was presented by the Public Service Committee to the Knoxville Jaycees in recognition of their outstanding efforts, in conjunction with the Knoxville Academy of Medicine, to further the immunization program, and for permission to use the term "Operation Pin Cushion" as the name of the State Association's program.

● The Tennessee State Medical Association's campaign to have all persons between the ages of six months and forty years inoculated against polio was officially launched on schedule, March 1st. The campaign was labeled "Operation Pin Cushion," thanks to the cooperation of the Knoxville Junior Chamber of Commerce.

● The Public Service Committee had begun a promotional campaign aimed at creating a demand on the part of the public for the Salk Vaccine. But on Thursday, March 7, the Public

"Operation Pin Cushion" Launched

Demand Creates Shortage

Service Office learned that there was a severe nation-wide shortage of the vaccine. After a thorough investigation, the office notified each county society of the situation, and suggested that the county programs, especially any clinic phase, not be started until the doctor in charge had positive assurance the vaccine was available.

"Pin Cushion" Back In the Sewing Basket

● Due to the shortage of vaccine the Public Service office immediately ceased distribution of promotional material. This was done to avoid promotion of the program while the vaccine was in short supply.

Media Liaison Committee

● Meanwhile, the Media Liaison Committee is active. The committee consists of representatives of the Tennessee Broadcasters Association, the Nashville Banner, Television Station WSM-TV, the state office of the National Foundation for Infantile Paralysis, and the Public Service Director. News releases, film and tape spot announcements are being prepared which will be distributed to all newspapers, TV and radio stations in the state when local situations indicate that sufficient vaccine is on hand to renew "Operation Pin Cushion" on a maximum effort level.

Public Notified

● The public has been notified of the shortage, with the explanation that the demand for the vaccine has outstripped production. The Public Service Office, while deploring the shortage, which was entirely unexpected, is highly encouraged to note that public apathy toward the Salk Vaccine apparently exists to a much lesser extent than anticipated.

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TV Report Upcoming

● The Public Service Committee has adopted a report of the special TV sub-committee, Dr. Wm. A. Garrott, Chairman, Cleveland, recommending that the State Association more fully utilize the TV stations in Tennessee to further the Committee's health education program. The Public Service Director was instructed to prepare a report and recommendations to be submitted to the Public Service Committee at its April 8th meeting. The Committee discussed the use of both live TV programs and filmed spot announcements.

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Indigent Hospitalization Program

● The 80th General Assembly has appropriated funds for the Public Service Committee-sponsored Indigent Hospitalization Program. The plan, backed by the Clement administration, coasted through the legislature without hitting a serious snag. What with funds being made available by the federal government, the program will have a total annual appropriation of \$1,583,000.00. Contracts between the Tennessee Department of Health and the Tennessee Department of Welfare were to be executed by April 1st, whereby the Health Department will act as agent for the Welfare Department in disbursing federal funds.

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Mrs. Jan McGee

● The Public Service Office is fortunate to have secured the services of Mrs. Jan McGee to take over the duties of secretary for the office. Mrs. McGee replaces Mrs. Mary Jane Kohrs, who resigned February 15. Mrs. McGee, formerly assistant circulation librarian at the Joint University Libraries, is a native of Kansas City, Missouri. She attended Drury College in Springfield, Missouri. Her husband, Richard K. McGee, is a Ph.D. candidate in clinical psychology at Vanderbilt.

tively rare; and, thirdly, that with abnormal vasomotor reflexes and abnormal pooling of the blood. I see nothing in the protocol implying that orthostatic hypotension of any type is involved in this patient's case.

Syncope due to other causes, such as severe anemias, drugs, polycythemia, Addison's disease, etc. can be rather readily excluded in this case.

This leaves me the consideration of the Adams-Stokes syndrome as a cause of syncope. This syndrome may occur as the result of cardiac standstill where both the auricles and ventricles stop beating, in which case the EKG would show a long pause. It may arise when the ventricles alone are involved with the auricles continuing to beat. The EKG will then show P-waves but no ventricular complexes for a rather long period of time. It may also occur from transient ventricular fibrillation.

A-V block, complete or incomplete, with the Stokes-Adams syndrome may occur in the following ways: (1) as a result of vagal stimulation; (2) carotid sinus stimulation; (3) vasovagal reflex; (4) drugs affecting the A-V node directly; (5) uremia; and (6) injury to the A-V node as seen in syphilitic gummata of the I-V septum, rheumatic carditis, congenital lesions of the interauricular or interventricular septum, myocardial infarction, calcific aortic stenosis, diffuse coronary disease, and infiltrative lesions of the heart.

I have mentioned previously that convulsions may occur with the Stokes-Adams syndrome. If the attack lasts as long as a second or two, the patient may experience a sudden clouding of consciousness; persistence for 5 to 10 seconds causes loss of consciousness, and if the attack persists convulsive seizures appear in approximately 15 seconds. The cerebral signs of the Adams-Stokes syndrome are due to cerebral anoxia resulting from cardiac asystole.

In an elderly individual with syncopal attacks in whom brain tumor and significant vascular degeneration can be reasonably ruled out, plus the exclusion of the other main causes of syncope I believe that what we are dealing with here is true cardiac syncope.

The common denominator of syncope and sudden death is cerebral anoxia. The cere-

bral anoxia is much more rapid and more severe in sudden death.

Excluding death due to trauma or poisoning the commonest causes of sudden death are: (1) diseases of the heart and the aorta; (2) respiratory disease, especially pneumonia; (3) cerebral complications, especially those associated with hemorrhage; and (4) diseases of the digestive and urinary tracts.

Heart disease is by far the commonest cause of sudden death. Coronary arteriosclerosis accounts for at least 60 percent of cases of sudden death. Sudden death may result at the onset of an acute coronary occlusion, or from ventricular rupture following myocardial infarction. Massive pulmonary embolism is a common cause of death in patients with acute myocardial infarction, as well as in patients bedridden for other causes. Calcific aortic stenosis is the commonest valvular lesion associated with sudden death, but the latter may occur with any valvular lesion, or myocardial disease.

If the heart is the seat of the problem here, then what type of heart disease did this man have? What type of cardiovascular disease caused his death?

It would be nice to postulate that this man had coronary arteriosclerotic heart disease and had sustained a myocardial infarction and subsequently developed a ventricular aneurysm. The fluoroscopic finding of an ovoid moving shadow near the left border of the heart could go along with that consideration. One could further postulate that the ventricular aneurysm ruptured and the result was sudden death. Small pulmonary emboli with the pleural effusions and pleural rubs could likewise be explained by this. The impaired left ventricular output could explain the syncopal attacks on the basis of cerebral anoxia.

However nice this story may sound, there are many inconsistencies that are obvious. First, there is no history compatible with angina, coronary insufficiency or myocardial infarction. Second, the EKG changes are not compatible with either myocardial infarction or ventricular aneurysm. Third, the course of ventricular aneurysm ending in sudden death is most unusual when not preceded by signs and symptoms of congestive failure. Also, if it is postulated that

ventricular aneurysm and decreased cardiac output were the cause of the patient's syncopal attacks and/or convulsions, to be consistent then, the ventricular aneurysm would have had to have been present some ten years prior to this patient's demise. Despite the attractiveness of this possibility and the fact that considerable attention has been devoted to this condition in the literature in the past several years, which, incidentally, may be a good reason to present such a case at CPC, I am going to say that I do not think that ventricular aneurysm was the cause of this patient's death. However, now would be a good time to see the X-rays and the EKG's to see if I might change my mind.

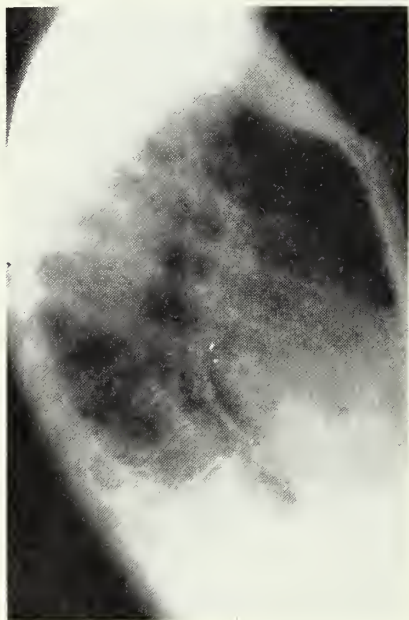


FIG. 1. Lateral chest X-ray revealing a mass in the region of the auricle.

The EKG's show only nonspecific T-wave changes. The lateral chest X-ray is of interest because to me there seems to be a calcified mass in the right auricular region. This will be of help as we further differentiate this case. The mass does not appear in the A-P X-ray.

Ten days prior to death, this patient was in an automobile accident and suffered only minor cuts and bruises. Subsequently, he developed pain and soreness in his left chest with some shortness of breath. Cardiac trauma as a cause of death, therefore, has to be considered. Cardiac trauma may be of two types, penetrating or nonpenetrating.

On the basis of the protocol, a consideration of the penetrating variety may be dispensed with. Sudden death may occur after nonpenetrating cardiac trauma with or without preceding symptoms of coronary insufficiency; rupture of the heart may follow. It may be either rapidly fatal or rupture of the heart may not occur until the second week after injury.

While it is true that the patient had chest pain after his trauma, I do not feel that cardiac trauma was the basic cause of this patient's death. First, there was an episode of similar pleuritic pain with a pleural rub some two years before death, without the help of trauma. Second, there was no significant evidence of congestive heart failure, rupture of any of the heart valves, hemopericardium with cardiac tamponade, or other signs of marked cardiac enlargement. It is true that, two days prior to death, an EKG was interpreted as abnormal with nonspecific changes consistent with myocardial disease; but ten months before his trauma, an EKG was also read as abnormal with slight S-T and T changes. I feel that the difficulty that finally killed this patient was present some time before trauma occurred.

Sudden death may occur with any valvular lesion. Calcific aortic stenosis is the most common valvular lesion associated with sudden death. This lesion could also explain the momentary blackout spells of the patient. However, since no murmurs were heard on three examinations, and apparently no calcification of the valve was noted on fluoroscopy, and since there was no clinical story that the syncopal attacks occurred during or immediately after exercise, which is a characteristic clinical feature of aortic stenosis, I doubt seriously that calcific aortic stenosis was the cause of the patient's death.

Likewise, on the basis of absence of murmurs, no history of lues, no history of chest pain suggestive of coronary insufficiency, absence of significant cardiac enlargement after apparently ten years of symptomatology, and with no evidence of aneurysm of the thoracic aorta, I will rule out syphilitic aortic insufficiency, syphilitic ostial stenosis, or rupture of a syphilitic aortic aneurysm.

Dissecting aneurysm of the aorta is an outstanding cause of sudden death. It occurs predominantly among males between the ages of 40-70, especially those with pre-existing hypertension.

Death is usually due to perforation of an aneurysm through the adventitia into the pericardium with subsequent hemopericardium and cardiac tamponade. I do not feel that a dissecting aneurysm was the cause of death in this case. The pain was not severe or retrosternal, nor did it have a tearing quality, nor was there the usual radiation of the pain to the back of the head and neck, the posterior thorax, lumbar region, the epigastrium, or into the lower extremities. Incidentally, there existed no evidence of hypertension in this case. With dissecting aneurysm of the aorta, death usually occurs suddenly, or within a few hours or days. I am cognizant of the fact that in isolated instances death may not occur for months or years after the initial dissection. In these instances, the dissection extends back through a second intimal perforation into the original aortic lumen producing the so-called double-barreled aorta. However, I doubt that dissecting aneurysm is the cause of death in this patient. In my opinion, it would not explain the episodes of blackout spells for ten years prior to death.

There are several reasons for considering the diagnosis of aneurysm of the sinus of Valsalva. One reason is that the patient usually dies after the rupture of such an aneurysm and, secondly, in those cases that survive, mural calcification has been noted. After seeing the X-rays, it is evident that we are interested in lesions that become calcified. This is a rare condition and the etiology may be congenital, luetic, arteriosclerotic, or follow an endocarditis. The right sinus is affected most often and only in exceptional cases is the left or posterior involved. I do not believe that this diagnosis was the explanation for the cause of death in this patient, for with rupture of such a sinus there follows the sudden appearance of precordial distress, and the development of a systolic-diastolic murmur, along with dyspnea and an increase in pulse pressure. The patient, to begin with, did not notice precordial pain, until two days

after his accident. No systolic-diastolic murmur developed and the pulse pressure was not widened. In addition, aneurysmal dilatation of the right sinus produces a round shadow projecting to the right, forward and upward, which rests on the root of the aorta on a small base. The aneurysm resembles a mushroom. The X-ray findings as presented this afternoon are not in agreement, from a positional point of view of the lesion, with aneurysm of the sinus of Valsalva.

The question next to be considered is whether or not this patient might have died as the result of an acute cerebrovascular accident. I do not believe one can entirely rule this out as the cause of death because no one saw the patient die. However, for such a sudden death, one would most certainly postulate cerebral hemorrhage. I have a feeling that this was not the cause of death in this case, as there was no evidence of hypertension, no mention the last few days of the patient's life of any unusual premonitory symptoms, such as headache, dizziness, drowsiness, or mental confusion; and, also, I do not feel that such a diagnosis accurately accounts for the entire picture here as presented by the protocol over a ten year period.

There is a cause of syncope and sudden death that is not considered as often as it should be in differential diagnosis. Several years ago, when I was visiting another clinic in Philadelphia, I saw a case which had presented syncope over a considerable period of time which suggested to me the diagnosis which I am going to offer today in this case—namely, tumor of the heart.

Tumors of the heart and pericardium have evoked an extensive literature out of all proportion to their relatively uncommon incidence and their relative unimportance as a cause of clinical heart disease.

The interest concerning cardiac tumors has grown by leaps and bounds. This is no doubt that due to the great advances made in anesthesia and cardiac surgery, that surgeons can, in specific instances, to remove some of these tumors successfully. The inability to correctly diagnose primary tumors of the heart antemortem is adequately reflected in the cardiac literature as recorded today. No doubt, this is another reason why

the condition is receiving so much attention in the literature. Progress is being made in the diagnosis of metastases to the heart from primary sites by paying attention to overt changes of the heart rhythm which occur in patients who have a malignancy elsewhere. Hemopericardium is also another finding which should make one think of tumor of the heart.

Cardiac tumors may be primary or secondary. They likewise may be benign or malignant.

Benign primary tumors are myxoma, rhabdomyoma, fibroma, lipoma, angioma, teratoma, leiomyoma, and xanthoma.

Primary malignant tumors of the heart may be classified as sarcoma of various types, mesothelioma of the pericardium, and rhabdomyosarcoma.

Secondary malignant tumors are metastatic carcinoma or sarcoma, carcinoma and sarcoma by direct invasion, and systemic neoplastic disease with cardiac involvement such as is found with leukemia, lymphoma, Kaposi's sarcoma and neurofibromatosis.

Primary or secondary tumors of the heart can cause cardiac embarrassment by: (1) mechanically blocking the valve, most usually the mitral or tricuspid; (2) interference with transmissions of the electrical impulse; (3) pericardial effusion with tamponade; and (4) destruction of the myocardium by infiltration.

In 1931, Yater¹ wrote his classic article on tumors of the heart and pericardium. He first divides the symptomatology of cardiac tumors into those symptoms found with tumors of the heart, but not primarily suggestive of the condition. He then considers the clinical findings which are actually suggestive of a heart tumor. Actually, no pathognomonic symptoms or signs need be present with cardiac tumors. Often the diagnosis is one of exclusion, and frequently it is only the atypical course of the cardiac patient which may suggest a tumor of the heart.

The clinical findings in patients with heart tumors which, in themselves, are not primarily suggestive of tumor of the heart are: absence of symptoms referable to the heart, symptoms of cardiac embarrassment terminally, signs and symptoms of congestive failure, symptoms suggestive of sub-

acute bacterial endocarditis, and sudden death.

The clinical findings suggestive of heart tumors are: heart block or evidences other than heart block that indicate the location of the tumor; signs and symptoms of cardiac dysfunction developing without apparent cause in a patient with a known malignant process; accumulation of hemorrhagic fluid, pericardial or pleural; other pertinent X-ray findings are in particular fixation or distortion of the cardiac chambers.

The patient under discussion today reached the age of 70 years without any significant evidence of organic heart disease except for the history of episodic blackout spells during the daytime for ten years. These I feel may well be explained on the basis of Stokes-Adams syndrome, or possibly as the result of a ball-valve mechanism. Certainly, the long course is compatible with a benign tumor. In this case, if the syncopal attacks are accepted as the beginning, there was absence of symptoms referable to the heart per se until late in the course of the disease.

In many instances of reported cardiac tumors, significant symptoms of cardiac origin are absent. One can readily see that a small fibroma of the valve, or a moderate number of nodules in the myocardium might have but little effect on the efficiency of cardiac action. It is astounding, however, how large tumors may become, how numerous the nodules may be, or how extensive the infiltration of the myocardium may be before cardiac function is disturbed. Thatcher² presented a case showing how minor the cardiac symptoms were in his patient, yet, the tumor involvement of the heart was great. The heart weighed 1100 gm. at autopsy.

The case today showed symptoms of cardiac embarrassment manifested by dyspnea, EKG changes and some cardiac enlargement terminally. Symptoms of congestive failure in this particular case were more subjective than objective. He died via the sudden death mechanism.

Sudden death has occurred in cases of tumor of the heart, either in the course of symptoms of cardiac insufficiency, or in the absence of any symptoms. Usually, sudden death has been found due to sudden occlu-

sion of either the mitral or tricuspid orifice, or by penetration of an intracavitary pedunculated tumor. Yater¹ reports a hyaline fibroma of the aortic valve in a patient 70 years of age, and also a fibromyxoma of the aortic valve in a woman 65 years of age.

Sudden death is common with cardiac tumors, particularly the primary ones. It has occurred in about one-third of the cases of fibroma or myxoma of the auricles. It has also happened in cases of angioendothelioma and rhabdomyoma. In cases in which sudden death occurs with primary sarcoma, the right auricle is usually involved.

The EKG findings in this case are consistent with tumor in that, usually, only non-specific changes compatible with myocardial disease are observed.

On the basis of the 10 year history of episodic blackout spells, the apparent slow course of progression in this case, the absence of evidence of malignancy elsewhere in the body, I am going to rule out metastatic tumor of the heart. Likewise, I am going to rule out mediastinal tumor on the same grounds. Incidentally, mediastinal tumor, per se, is usually diagnosed in such a condition as this rather than the correct diagnosis of cardiac tumor. Now, this leaves us with a consideration of the primary tumors of the heart.

Approximately 80 per cent of the primary tumors of the heart are benign and 20 per cent malignant.³ The benign tumors are mainly myxomas and the malignant tumors are almost entirely sarcomas. Again, on the basis of the long course involved with this patient, I will restrict my comments to the benign primary tumors of the heart. The longest duration of life that I can find reported with a primary malignant tumor is three and a half years.¹

There are two primary tumors of the heart which are known to calcify, one more than the other. These are the rhabdomyoma and the fibroma which is also called fibromyxoma. Calcification of the rhabdomyomas has been mentioned by Friedberg.³ There are three morphologic types of this tumor—the solitary, the multiple, and the diffuse. The multiple nodules may be subendocardial, intramural, or subepicardial. They may or may not project into the cavi-

ties of the heart of the pericardial sac. Frequently, other developmental conditions occur with this tumor which are not present in this case—namely, tuberous sclerosis of the brain, mixed tumors of the kidney and adenoma sebaceum of the skin. The solitary nodule is usually located at the apex of the heart and, according to Friedberg, is unassociated with other developmental abnormalities. Most deaths from this tumor occur by the end of the third year, but deaths have been reported up to the 35th year. However, as far as I have been able to determine, no such death has occurred in association with this tumor beyond the age of 32.

Fibromas or fibromyxomas make up about 75 per cent of the benign tumors and may calcify. They are, in fact, frequently calcified in the older age groups. Sudden deaths occur often with these tumors. Fibroma may occur as a solid gray or white polypoid tumor of the left or right atrium arising near the fossa ovalis, or as a more or less circumscribed mass within the myocardium of the ventricles, or the ventricular septum. Such a tumor, therefore, might have caused this patient's demise, either by a ball-valve action involving one of the heart valves, either the mitral or tricuspid, or by progressive infiltration of the myocardium per se, exerting extrinsic pressure and narrowing a valve orifice without direct involvement of the valve.

Various clinical pictures have been described with tumors of the left atrium by different observers. These have been reviewed by Fawcett & Ward¹ and are given, as follows: (1) congestive heart failure; (2) fainting attacks and loss of consciousness with the patient erect; (3) sudden and unexpected death; (4) relentless heart failure in spite of adequate rest and digitalization; (5) paroxysmal nocturnal dyspnea; (6) abnormal radiological shadows; (7) cardiac irregularities; and (8) fatal pulmonary edema.

The pulmonary edema with tumor of the left atrium is comparable to the severe and sometimes fatal pulmonary edema that can occur with tight mitral stenosis without significant cardiac enlargement.

In the absence of significant congestive heart failure or paroxysmal nocturnal dyspnea and on the basis of the X-ray, I

feel that the tumor here, more likely, involves the right side of the heart. One could still account for the fainting attacks if the tricuspid valve were involved by one mechanism or another. This site would also explain the relative absence of signs of left-sided heart failure. Sudden death could also be explained. The X-ray picture to my mind would fit. The syncopal attacks and the apparent long course can be explained. I feel that the episode of pleurisy that this patient experienced two years prior to death may well have been on the basis of embolization. It may well have been that he could have died a sudden death the result of massive occlusion of one of the main branches of the pulmonary artery. If this occurred, my feeling is that a piece of tumor broke off and was the cause of the obstruction.

In closing, I feel that the final diagnosis in the case today is best given as primary benign tumor of the heart, probably a fibroma or fibromyxoma involving the right side of the heart, with possible pulmonary embolization.

Clinical Diagnosis. Primary benign tumor of the heart.

Anatomical Findings

DR. J. M. YOUNG: The autopsy was limited to an examination of the heart. This organ weighed 615 Gm. The epicardial surface was not remarkable. In the dilated left auricular chamber hung a polypoid mass 3.8 x 2.6 x 2.8 cm. which arose just below and posterior to the fossa ovalis region. The mass was freely movable within the auricular chamber and settled into place almost completely blocking the mitral valve (Fig. 2). By palpation and on section the mass revealed much calcific change in the distal part and the cut surface presented near the stalk a glairy, mucoid appearance. The heart valve measurements were tricuspid 13.2 cm., pulmonic 8.6 cm., mitral 10.8 cm., and aortic 7.9 cm. The mitral valve leaflets were moderately thickened and firm but



FIG. 2. The heart opened showing the left auricle and ventricle with the large primary tumor arising from the inter-atrial septum.

not calcified. No thrombi were found in the auricular appendages. The coronary ostia and vessels were patent. The myocardium revealed no scarring.

Microscopically the tumor revealed a background of pale pink staining myxoid material showing fibrosis and many large areas of sheet-like calcification. The myocardium revealed moderate hypertrophy of the fibers.

This case, then, does represent, as diagnosed by Dr. Knox, a myxoma or fibromyxoma of the heart. This one, as is usually the case, is an intracavitary one. We should become familiar with this tumor for today with cardiac surgery a reality these tumors lend themselves to removal, and several cases have been operated upon successfully.

Pathological Diagnosis. Fibromyxoma of the heart.

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President's Letter



DR. WOOD

In writing this—the last message of the Presidential year—I wish first to extend my gratitude for the honors and for the opportunities given me in the past year to serve the Profession of Medicine, and for those con-

tacts with representatives from other professions, trades and organizations that make up our state and our nation.

As one's circle of contact expands, the smaller seems the contribution made by one's own group or individual effort, yet we as physicians must recognize the importance of our contribution and the need for cooperation with other groups in the development of civic life in all its phases, social, moral, political and philanthropic. While engaging in these, the medical profession at the same time is carrying a double obligation, that of being aware we are first physicians, obligated to the responsibility for the care of health, and secondly avoiding those situations where we may appear that self exploitation is the major motivation of our endeavors.

We physicians recognize there still remain many problems that we alone can solve. We alone can keep ourselves prepared to render the best of professional care. We alone can create good public re-

lations, and this, just as national good will cannot be bought or accomplished by self advertisement. Two things have in recent history influenced the changing order of medical practice of today and of the future, and they are the rapid expansion of knowledge and technical skills in the sciences, and the evolution of the profession's idea of social responsibility.

We alone can keep our profession free.

In the second century a Grecian writer noted: "In the case of the Medical Profession, the more distinguished it is and the more serviceable to the world, the more unrestricted it should be for those who practice it. It is only just that the Art of Healing should carry with it some privilege in respect to the liberty of practicing it, and that it should not be subject to enslavement by the law." By this it may be inferred that the person and not the State is to be served. To the State, some obligation is due if we infer the common good but not the collective good. It is well to remember that holding benefits in common is quite different than being recipients of a common benefit.

To the entire staff of the State organization goes my sincere thanks for their most splendid cooperation throughout the past year.

R. B. Wood M.D.

Our New President



DR. JESSE PAUL BAIRD
Dyersburg

Dr. Baird Continues Family Leadership In Medicine

The man who assumed the presidency of the Tennessee State Medical Association earlier this month, brings with him a family history steeped in the traditions of the medical profession.

Dr. Jesse Paul Baird of Dyersburg carries on the practice which was started by his father, Dr. Jesse P. Baird, and his uncle, Dr. E. H. Baird. They practiced general surgery and founded the Baird-Brewer General Hospital in Dyersburg.

The new president is a Tennessean by choice. He was born in Marionville, Missouri, May 14, 1905, and moved to Dyersburg in 1914, the city in northwest Tennessee where his father and uncle began their practice.

He was educated in the public schools and was graduated from Castle Heights Military Academy in Lebanon, Tennessee. Dr. Baird took his pre-medical work at Vanderbilt University in Nashville, and transferred to Tulane Medical School, New Orleans, where he received his M.D. degree in June, 1930. While at Vanderbilt, Dr. Baird was a member of Delta Kappa Epsilon academic fraternity and served as president of the Tulane Chapter of Phi Chi medical fraternity during his senior year in 1930.

Dr. Baird served his general internship at the United States Marine Hospital in New Orleans in 1930-31. He then returned to Dyersburg where he entered general practice and received further general surgical training under his late father and uncle. In 1940 he was admitted as a Fellow of the American College of Surgeons.

Dr. Baird entered military service during World War II in October of 1942. He was assigned to the general surgical section where he served with the rank of captain and later as major.

He is presently a member of the Dyer-Lake-Crockett County Medical Society, the Tennessee State Medical Association, and the American Medical Association. He has served organized medicine in Tennessee for many years with distinction, vision, and extraordinary leadership. He has been president and secretary of the Dyer-Lake-Crockett County Medical Society. For many years he was Councilor of the Ninth District, an official officer of the Tennessee State Medical Association. He has been a member of the Association's Public Service Committee since its founding as well as serving with distinction and exemplary leadership on the Postgraduate Education Committee of TSMA.

Dr. Baird's contributions to organized medicine reflect great credit on the Tennessee State Medical Association. He has shown that he is willing to serve and assume responsibility not only for his patients and the highest type of medical care, but he has realized the important problems faced by the medical profession and is willing to spend his time and energy to do something about them.

He has used his great influence for the betterment of medicine in his part of the state. His counsel is constantly sought by his colleagues in the northwest section of the state where he resides and maintains his practice.

Dr. Baird is an able physician fully capable of leading the Tennessee State Medical Association on to greater accomplishments.

Dr. Baird was married to Miss Merrill Miller of Osceola, Arkansas, in 1931. Dr. and Mrs. Baird have two daughters: Joan, now Mrs. K. S. Lewis, Jr., and Barbara, now Mrs. Martin A. Bruce.

Because of his widespread professional and civic activities, Dr. Baird's leisure time is necessarily limited. However, when possible, he does enjoy boating and duck hunting. While he declines to comment on his degree of proficiency as a nimrod, he does modestly admit to bearing, as he phrases it, "The inept and irreverent title of Commodore of Samaria Bend Yacht and Boating Club." Dr. Baird hastens to explain that this "is a non-existent organization."

—J. E. BALLENTINE

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APRIL, 1957

EDITORIAL

FAT EMBOLISM

With the advent of chemotherapy and antibiotic therapy, medicine has become more successful in the prevention and treatment of infectious diseases. Scientific progress, however, presents new problems to the physician. As more and more automobiles are sold, with higher and higher horsepower and speed, to be driven by younger irresponsible youths or older adults with slower reactions, the incidence of accidents will climb higher and higher. Because of this it seems, like the obstetrician, the traumatic surgeon will be forever with us. Although fat embolism has been known and recognized for many years, its increasing frequency can be attributed to the rising accident toll and recognition of the disease entity.

The most likely source of fat emboli is the

marrow of the fractured long bone. Gauss¹ and others have pointed out three requirements for the production of fat embolism.

1. The envelope of the fat cell must be ruptured and liquid fat freed.
2. Veins in the vicinity must be torn.
3. Increased pressure must be present to force the freed fat into the torn vein.

We may picture the embolus of fat entering the broken vein from marrow of the fractured bone. It then stops temporarily in the capillaries of the pulmonary circulation where interference with gaseous diffusion of the alveolar circulation ensues. Some of the cerebral symptoms may be due to this disturbance of respiration. As time passes, the embolus is squeezed on and eventually enters the systemic circulation, where it lodges in a terminal vessel, usually in the brain, kidney or skin.

Clinically the patient is subjected to severe trauma with fracture of a major long bone, usually the femur or tibia. Symptoms occur, following a period of a few hours to six days, unlike pulmonary intravascular clots which usually do not become manifest until ten days after trauma. With pulmonary involvement, intense cyanosis of the nail beds and lips is noted as well as an increase in the respiratory rate and depth with stertorous dyspnea. Shortly thereafter restlessness and anxiety occur which may progress to delirium and coma. On the second or third day fine brownish petechiae occur, usually on the upper thorax especially in the axillae and lateral chest wall.

Prevention of fat embolism is the best and most effective treatment known. Immobilization of a fractured long bone by correct splinting, careful transportation and early definitive reduction, are most important measures in reducing the incidence of this catastrophe.² Oxygen under pressure is most beneficial if delirium and coma intervene. Love and Stryker² suggest the use of 5 per cent glucose-5 per cent alcohol mixture when fluids are required in cases of severe trauma, and have noted no cases of

¹Gauss, cited by Vance, B. M.: The Significance of Fat Embolism, Arch. Surg. 23:426, 1931.

²Love, J., and Stryker, W. S.: Fat Embolism: A Problem of Increasing Importance to the Orthopedist and the Internist, Ann. Int. Med. 46:342, 1957.

clinically significant fat embolism on this regimen. It has been demonstrated that such a procedure is useful in clearing experimental fat emboli in animals. Heparin, because of its lipolytic effect, has been recommended in doses too small to disturb coagulation.

The key to the problem of fat embolism rests on prevention by early adequate handling and treatment of patients with fractures to long bones. Vigorous therapy for those who may be developing symptoms is much more valuable than heroic measures after the clinical picture is obvious. The disease can not be diagnosed unless thought of, and must be considered early in order to save lives.

A. B. S.

MEMORIAL TRUST FUND

The House of Delegates, in 1956, passed a Resolution for the establishment of such a fund. It was pointed out in the resolution that friends often wish to express their sympathy to the family of a deceased doctor by contributions to a permanent charity in which he had had interest. The Resolution further recommended that the Tennessee State Medical Association establish a qualified agency to receive contributions and donations in a Memorial Trust, the income from such invested funds to be disbursed to a medical charity within the State.

The Board of Trustees then set up a legally authorized Memorial Trust Fund to receive such funds. It appointed a Board of Trustees consisting of Drs. Henry Douglass, Chairman, Joe Platt, and Ernest Kelly to administer the monies received. The sole control of the Fund is in the hands of this Board, which feels that the distribution of income from the Trust Fund should be available for use in aiding in any need for charity which has a medical basis or background.

It is the hope of the Committee and of the Board of Trustees that contributions will be made to the Fund in memorial tribute to deceased members.

R. H. K.

CHATTANOOGA STEPS OUT

Dr. Joe Johnson, Chairman for the American Medical Education Foundation for the Third District received the following letter from Dr. George F. Lull, Vice-President of the Foundation:

"It is with real gratitude that we express our appreciation to the Chattanooga-Hamilton Medical Society for their generous check for \$4,000 to the American Medical Education Foundation. This is in addition to the \$1,000 previously given and the matching grant of \$5,000. Such evidence of the interest and willingness of the medical profession to support medical education by this substantial gift is most encouraging. May you be rewarded by the very wonderful strides that medicine is making today.

"My warmest regards to you and the members of the society."

This meant \$10,000 to be divided among the three medical schools in Tennessee.

As has been pointed out on these pages before, the financial condition of the medical schools in the Country is in a precarious state, especially is this true of some of the privately endowed schools whose fixed income from long established endowment is plainly inadequate in a time of inflation. Tax-supported schools have a better chance of survival as legislatures, at least in a measure, keep funds available to meet inflationary costs.

Federal funds made available by the last Congress offered aid, on a matching basis, for construction and rehabilitation for medical schools and the present Congress may do the same. Medical educators hope for such "one shot" programs to give them the opportunity to modernize outmoded laboratories and equipment. But they are not anxious for public funds to actually underwrite the school activities from year to year because of the ever-present implications of governmental control of medical education.

It was to aid in providing the running expenses that the American Medical Education Foundation was organized. For some years now Tennessee schools have been receiving financial aid through the kindnesses and gratuities of the northern and western states. *The Tennessee schools have received much more money than has been contributed by doctors of Tennessee.* Only 36, or 1 per cent of Tennessee's 3,535 physicians contributed in 1955 to the

A.M.E.F. (See insert in the November issue of the JOURNAL.) This contribution by the Chattanooga-Hamilton County Medical Society matched by Chattanooga business men brought up our state, at least a little, in the roster of contributing states.

In February, \$31,887 were distributed to the three medical schools of the state. The University of Tennessee College of Medicine received \$10,987.50, Meharry Medical College \$9,514.50, and Vanderbilt University School of Medicine \$11,385.

Congratulations and thanks go to the Chattanooga-Hamilton County Medical Society from the profession of the State for giving Tennessee a better standing in the A.M.E.F.

R. H. K.

DEATHS

Dr. George W. Burchfield, 62, Maryville, died February 27 at Blount Memorial Hospital.

Dr. J. M. McWilliams, 79, Fayetteville, died February 2nd at Lincoln County Hospital.

Dr. David F. Johnson, 54, Pine Forest, died February 22nd at his residence.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis-Shelby County Medical Society

The Society met in regular session in the Institute of Pathology Auditorium on February 6. The scientific program was under the auspices of the Memphis Heart Association. Dr. Robert Ackerman, Chairman of the Professional Education Committee of the Memphis Heart Association, introduced the guest speaker of the evening. He was Dr. Irvine Page, Director of Research of the Cleveland Clinic Foundation and the Past President of the American Heart Association. His subject was "Hypertension."

Knoxville Academy of Medicine

The Knoxville Academy of Medicine celebrated its 100th anniversary on March 20th. The anniversary meeting was held in the University of Tennessee Student Center. Members of the Society and their wives and

guests attended and a large audience heard Miss Mary Rothrock, an outstanding librarian and Knoxville citizen, discuss the founding and early history of the city of Knoxville. Dr. R. H. Kampmeier, of Nashville, gave a historical paper entitled "100 Years of Progress in Medicine."

Dr. J. Gilbert Eblen, President of the Society, presided at the meeting. The Centennial Committee was composed of Dr. George Inge, Chairman, Dr. John Burkhart, Dr. Lucian Trent and Dr. Joe Platt. The theme of the entire meeting was the commemorating of a century of medical progress.

Roane County Medical Society

The regular monthly meeting was held on March 22 in the Oak Ridge Hospital. The scientific program consisted of a symposium on "The Management of Coronary Disease." Panelists were: Dr. E. Charles Sienknecht, Knoxville; Dr. John D. DePersio, Oak Ridge; Dr. Gould A. Andrews, Oak Ridge; Dr. James L. Southworth, Knoxville.

Williamson County Medical Society

The Society conducted its regular meeting on February 19. A discussion was held regarding adult vaccinations for polio. Dr. Edwin L. Williams, Nashville, was the guest speaker and led a round table discussion on problems in obstetrics.

Consolidated Medical Assembly

The regular meeting was conducted on March 5th in the New Southern Hotel. The scientific program consisted of "Controversial Obstetrics." Speakers were Drs. Henry B. Turner, Hall Tackett, Francis Cole, of Memphis.

Hamblen County Medical Society

The regular monthly meeting of the Society was held on March 5 at the Public Health Building. Among the items discussed at the meeting were the publicity to be given to the Salk Polio vaccine program and the matter of malpractice insurance as endorsed by the Tennessee Medical Association.

The scientific program was presented by Dr. C. J. Duby, of Morristown, who presented two interesting patients.

Chattanooga-Hamilton County Medical Society

On March 7 a joint meeting was held with the Chattanooga Bar Association. Speakers included Mr. John Cameron, attorney, Dr. John J. Killeffer, and Dr. Walter Boehm. A thirty-minute film entitled "Medical Witness" was shown. Dr. Gene H. Kistler, Medical society president and Mr. Albert Hodge, chairman of the bar association committee, presided.

The March 28 meeting was held in cooperation with the Tennessee State Medical Association in its Postgraduate Symposium Program at Cleveland, where the subject "Acute Infectious Diseases and Their Complications in Children," was presented.

Bradley County Medical Society

The Bradley County Medical Society met at the home of Dr. W. A. Garrott on February 12. The scientific program was presented by Dr. Cecil H. Kimball, radiologist at the Bradley Memorial Hospital, on "X-ray Examination of the Gastrointestinal Tract."

Blount County Medical Society

The Society and with neighboring medical societies met in the Blount Memorial Hospital on March 20. The medical symposium, during the afternoon and evening, was given by Dr. James G. Hughes of Memphis, Dr. Vernon Knight of Nashville, Dr. George Thomas of Pittsburgh, Pa., and Dr. Roy Parker of Nashville.

Nashville Academy of Medicine and Davidson County Medical Society

The regular meeting was conducted in the Vanderbilt University Hospital on March 12. The scientific program was presented by Dr. George Meneely, Director of the Radioisotope Center of the Vanderbilt Hospital. His subject was "Radioactive Isotopes." The program followed dinner in the cafeteria.

medical care to service families, is working on some long- and some short-range plans of importance to state societies.

To meet a problem coming up in the next few months, the office is notifying states that contracts for physicians' services, negotiated through the state societies last fall, will be extended automatically when their expiration date of July 1 arrives. However, there is no definite time period set for any of the extensions; each contract will be continued in effect until that particular state's agreement has been renegotiated. When the contract is extended, according to Maj. Gen. Paul I. Robinson, head of the Office of Dependent Medical Care, it will be possible to make necessary adjustments, but he hopes not too many changes will be asked at that time.

Then, after July 1, each state will be given 60 days' notification before Defense Department makes its final audit covering the period from December 7, 1956, when the program went into effect, through June 30, 1957. This audit has been promised in each state before renegotiation starts.

Both the state fiscal agents and Gen. Robinson's staff should be well prepared for renegotiations when the time arrives. No renegotiations will be undertaken until January, 1958. They will continue for most of next year, on a tentative schedule that calls for handling about five contracts per month.

Under this tentative arrangement, the contract with the Tennessee Medical Association will be renegotiated during the Month of November, 1958.



If any large-scale health and medical program is to be pushed through Congress this year, most of the pushing will be done by the Democrats, who, in control on Capitol Hill, can get what they want, in theory at least.

Announcing that the idea of a special presidential health message had been dropped for this year, Secretary Folsom also said the Republican administration would press for only three major health-medical bills. All three, incidentally, were before Congress last year but were not acted upon. They are:

1. Federal assistance to medical, dental, and public health schools to help them build and equip new teaching facilities or improve and expand existing classrooms or labs.

2. Waiver of the antimonopoly laws to permit small companies (none doing more than one per cent of the total business) to pool some of their funds for experimental work in expanding voluntary health insurance.

3. Authorization for construction of sanitary facilities on Indian reservations.

In outlining these legislative objectives of the administration, the Secretary took the opportunity to make clear he does not think much of one bill that has the ardent support of some Democrats and of some labor leaders. It would have the government pay for 60 days' free hospitalization annually for persons aged 65 and over who are un-

NATIONAL NEWS

The Month in Washington (From the Washington Office of the AMA)

The Army's Office of Dependent Medical Care, handling the new program that offers private

der social security, and their dependents if also over 65.

Mr. Folsom said the social security administration has all it can do administratively to put into effect the major amendments passed last year, and that the "hospitalization at 65" plan skirts so close to the area of compulsory health insurance that it should be regarded cautiously.

A House Committee, making a survey of the cost of veterans' programs, has been asked by VA Administrator Harvey Higley to ponder this question: Should more VA hospitals be constructed when we know beyond doubt that they will be largely for the benefit of non-service-connected cases?

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As anticipated, pressure already is on Congress to drop or lower the age 50 limit for OASI payments because of disability. Many bills have been introduced on the subject.

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National Organization Set Up To Promote Jenkins-Keogh Plan

Seven associations, including the American Medical Association, have banded together into a national organization to promote legislation for establishment of voluntary pension plans for the self-employed, the Jenkins-Keogh proposal long supported by the AMA. Name of the new organization is "American Thrift Assembly for Ten Million Self-Employed." Its headquarters are in Washington, at 1025 Connecticut Avenue. F. Joseph Donohue, Washington attorney, is national chairman.

In addition to the AMA, charter members of the new group are American Bar Association, American Institute of Accountants, American Retail Federation, National Association of Real Estate Boards, American Dental Association, and National Association of Retail Druggists. Its steering committee will present to the public and Congress the viewpoints of some 20 national associations representing business, agriculture and the professions.

The objective is passage of legislation to authorize deferment of income tax on a portion of income if put into a retirement or annuity program, with tax to be paid as the money is received back in the form of retirement benefits. Under present law, corporations need not pay taxes on money put into retirement plans for their employees, but the self-employed are denied this advantage.

MEDICAL NEWS IN TENNESSEE

The Andrew Jackson Chapter of the Tennessee Academy of General Practice

The Society met on February 5th at Centerville where Drs. Robert Hartman and

Sol Rosenblum of Nashville presented papers on office problems and anemia.

Registration of Births and Deaths

"The Department of Public Health has a job to do that can be successfully completed only through a one hundred per cent cooperation between the Department of Public Health and the private practitioners of medicine. One of our biggest problems from the point of view of time consumed and completeness of work performed has to do with delayed registration of births and deaths.

"Our February report contained 451 certificates that were filed with this Department from *one to five months late*. Anything that you as an individual physician can do to expedite the filing of these certificates will be appreciated. *Your patient is the individual who will benefit.*"—R. H. Hutcheson, M.D., Commissioner, Tennessee Department of Public Health.

Medicare Information

First quarter figures on Medicare operations nationally point to its slow development in most states. Only 27 states actually have presented claims for payment, yet contracts have been signed with 47 state medical associations. In Ohio and Rhode Island, which have not signed, doctors are being served by insurance companies appointed as program administrators by the government. The three months nationwide operation discloses payment by government of 4,407 physicians' claims for \$316,000. The claims show the following spread of dependents: Army, 25.5%; Navy, 30.1%; Air Force, 41.7%; and Public Health Service, 2.7%.

Doctors in Medicare Please Note: Medicare Regulation Is Changed

The attention of physicians participating in the "Medicare Program" is called to the following, which appeared in the February 15 issue of the A.M.A. Washington Newsletter: "Defense Department announces a change in regulations that will eliminate some paper work for physicians under the dependent medical care program. When the patient was treated on an outpatient basis for injuries under the old system, the

doctor would collect the first \$15 from the patient, apply it to his bill, then submit the remainder of his bill jointly with the hospital or lab bill for payment by the government. In the future if the doctor's fee exceeds the \$15 he will submit the remainder of his bill separately, and the hospital or lab will submit its bill separately."

Obstetric service. Be sure dependent-patient signs both blanks in Item 14. (Form DA-1863.) If a change of physician has occurred during the prenatal period, state reason for the change in Item 14; if no change was made, state "none." The "from" and "to" dates in Item 18 mean from the first date the patient was seen through the post partum checkup. In Item 22, enter the date of delivery. This information is essential in computing amounts due for prenatal care.

Consultants. Physicians acting as consultants for Medicare patients should submit separate claims, but in all cases the attending physician must indicate authority for consultation service by signing the consultant's claim in Item 31.

Attending physician. Payment is authorized only for the attending physician in the care of a patient. The government will pay only authorized amounts for anesthesiologists, radiologists, pathologists, and consultants but not for hospital visits.

Unauthorized outpatient care. Medicare is almost exclusively an in-hospital program and does not cover most office and home care. It has been disappointing, but some claims have been rejected because of unauthorized care. Certain diagnostic procedures, prenatal visits, and care of wounds, fractures, and lacerations only are authorized outside a hospital.

Medicare Claim forms. Almost three-fourths of all claim forms (DA Form 1863) returned for correction contain minor errors or omissions only. Physicians can speed up payments by having office secretaries and clerical personnel become thoroughly familiar with instructions in the Medicare Manual and those on the reverse side of the claim form.

Mid-South Medical Assembly

The 68th annual session of the Mid-South Postgraduate Medical Assembly was conducted at the Peabody Hotel in Memphis

from February 12-15. Approximately 1,000 doctors from Tennessee and surrounding states attended these sessions.

Guest speakers included Dr. C. Lockard Conley of Baltimore; Dr. Johnson McGuire of Cincinnati; Dr. David M. Bosworth of New York; Dr. Carl H. Smith of New York; Dr. Alton Goldbloom of Montreal, Quebec; Dr. William H. Kammerer of New York; Dr. Bayard T. Horton of Rochester, Minn.; Dr. Irving H. Leopold of Philadelphia; Dr. Frank D. Lathrop of Boston; Dr. Clyde I. Randall of Buffalo, New York; Dr. Stuart C. Cullen, Iowa City; Dr. James E. Lofstrom, Detroit; Dr. Robert Lich, Jr., Louisville; Dr. Raymond Postlethwait, Durham; Dr. John W. Kirklin, Rochester, Minn.; Dr. R. Russell Best of Omaha; Dr. Clifford D. Benson, Detroit; and Dr. Isadore Dyer of New Orleans.

Seminar Held At Oak Ridge

Twenty-eight physicians and scientists met recently in Oak Ridge to participate in a special seminar in thyroid uptake, conducted by the Medical Division of the Oak Ridge Institute of Nuclear Studies. The two-day seminar was one of a series to be presented by ORINS to provide instruction and a standard method of calibrating the uptake of radioiodine by the thyroid gland. In view of the recent success of such meetings, six seminars of this type are planned for 1957.

Meharry Medical College

The tenth Annual Hale-McMillan Lecture was given Tuesday, March 12. Dr. William P. Longmire, Professor of Surgery at the University of California, spoke on "The Treatment of Portal Hypertension."

University of Tennessee

Dr. Glen M. Clark has joined the staff of the College of Medicine as assistant professor of medicine. His interest is in research in arthritis. Dr. John W. Hylin, of Columbia University, has been appointed research associate in the Division of Chemistry.

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Dr. Donald B. Zilversmit, professor of physiology, has been selected second award winner in the 1956 Glycerine Research Con-

test sponsored by the Glycerine Producers Association. He received \$300 and an honor certificate for developing a technic which makes it possible to prepare commercially stable high-caloric fat emulsions for intravenous feeding.

Wilson County Medical Society

Dr. R. E. Mudd has been elected president succeeding Dr. T. R. Puryear. Other officers are Dr. B. M. Hightower, vice-president; Dr. T. R. Puryear, secretary-treasurer. Dr. O. Reed Hill was elected a delegate to the Tennessee State Medical Association. All are from Lebanon.

Dues of State Medical Associations

The following summary of dues of the State medical associations may be of interest to the membership:

State	Dues	State	Dues
Alabama	\$ 50.00	Nebraska	\$ 35.00
Arizona	70.00	Nevada	100.00
Arkansas	25.00	New Hampshire	40.00
California	50.00	New Jersey	30.00
Colorado	50.00	New Mexico	70.00
Connecticut	28.00	New York	35.00
Delaware	50.00	North Carolina	40.00
Florida	40.00	North Dakota	75.00
Georgia	25.00	Ohio	25.00
Idaho	40.00	Oklahoma	42.00
Illinois	40.00	Oregon	40.00
Indiana	30.00	Pennsylvania	40.00
Iowa	60.00	Rhode Island	50.00
Kansas	40.00	South Carolina	20.00
Kentucky	35.00	South Dakota	75.00
Louisiana	50.00	Tennessee	25.00
Maine	35.00	Texas	50.00
Maryland	50.00	Utah	70.00
Massachusetts	35.00	Vermont	35.00
Michigan	45.00	Virginia	25.00
Minnesota	40.00	Washington	35.00
Mississippi	40.00	Washington, D. C.	50.00
Missouri	35.00	West Virginia	25.00
Montana	53.00	Wisconsin	65.00
		Wyoming	25.00
		National Average	\$43.50
		Average for 13	
		Southern States	\$35.00

PERSONAL NEWS

Dr. William F. Meacham, Nashville, has been elected President of the Southern Neurosurgical Society. **Dr. C. D. Hawkes**, Memphis, was elected Secretary-Treasurer.

Dr. George Dodson, Jackson, recently spoke before the Jackson Lions Club.

Dr. Fred A. Martin, Cumberland City, was recently honored for 50 years in the practice of medicine, most of which has been in and near Cumberland City.

Dr. R. L. Wilson, Henderson, has announced the opening of his office for the practice of medicine. He will be associated with **Dr. O. M. McCallum**.

Dr. William G. Stephenson and **Dr. Joseph W. Johnson, Jr.**, Chattanooga, recently spoke before the Tennessee Valley Pharmaceutical Forum.

Dr. H. H. Hyatt, Copperhill, has been elected a Qualified Fellow in the International College of Surgeons.

Dr. Robert M. Metcalfe, Crossville, has been elected President of the Council of Southern

Mountains.

Dr. H. B. Everett, Memphis, was recently honored on a guest program celebrating his 50th anniversary as a practicing physician.

Dr. Norman A. McKinnon, Jr., announces the opening of his office for the practice of obstetrics and gynecology in Maryville. He will be associated with **Dr. Samuel S. Lambeth**.

Dr. Reynolds Fite, Winchester, has been named the outstanding citizen of 1956 by the Franklin County Jaycees.

Dr. Stewart Smith, Chattanooga, spoke before the Woman's Auxiliary to the Hamilton County Medical Society. His subject was "Preventive Medicine."

Dr. William M. Lovejoy, Memphis, has been elected President of the Atlantic Union Committee.

Dr. Jean Hawkes, Memphis, has been named Chairman of the sub-committee on education for the Civic Research Committee.

Dr. R. P. Beasley, Dickson, has resigned as Mayor of that City.

Dr. Charles Ray Swift, formerly of Chattanooga, is the new resident physician in the Palmer Clinic at Palmer.

Dr. Kirkland W. Todd, Jr., Nashville, has been elected director of the Tumor Clinic at the Nashville General Hospital.

Dr. John E. Carlton, Fayetteville, has assumed the duties as director of the Lincoln County Health Department. He will also serve as director of the Giles and Moore County health departments.

Dr. Thomas H. Curtis has returned to Chattanooga to resume his practice. He will be located in the Doctors Building in Chattanooga, and will practice obstetrics and gynecology.

Dr. J. Franklin Fisher has opened his office for the practice of medicine and surgery in McMinnville.

Dr. D. J. Johns, Nashville, recently addressed members of the Tennessee State Association of Nursing Homes.

Dr. C. L. Chumley, Knoxville, has been elected a vice-president of the Mid South Postgraduate Medical Assembly.

Dr. Thomas F. Frist, Nashville, recently discussed "Diseases of the Heart" at the Nashville Business and Professional Women's Club.

Dr. Robert J. Brimi, Knoxville, spoke on "Catheterization of the Heart" before the Private Duty Nurses of the Tennessee Nurses Association.

Chattanooga physicians recently appearing on the television program "Your Doctor Speaking," were **Dr. Carl Hartung**, **Dr. John P. Carter** and **Dr. Gene H. Kistler**.

Doctors Van Fletcher and **Cooper H. McCall** announce the removal of their offices to the Doctors Building in Chattanooga.

Dr. Guy M. Maness, Nashville, announces the removal of his office to the Medical Arts Building.

Doctors Robert G. Demos, **Harry E. Jones** and **Charles L. Suggs**, of Chattanooga, announce their

association in partnership for the practice of Obstetrics and Gynecology, with offices in the Doctors Building.

Dr. John E. Kesterson, Knoxville, announces the removal of his office to the Blount Professional Building.

Dr. James G. Hughes, professor of pediatrics of the University of Tennessee, has been made an honorary professor of the University of San Carlos of Guatemala at the time of the Third Central American Pediatric Congress, held in Guatemala City.

ANNOUNCEMENTS

West Tennessee Medical and Surgical Association

The program for the West Tennessee Medical and Surgical Association will be held at the Paris Landing Hotel on May 9, 1957. The program will be as follows:

- 1:00-2:00 P.M. Registration
- 2:00-2:20 P.M. "Some Ocular Manifestations of Systemic Disease"
Dr. William Roberts, Jackson, Tennessee
- 2:20-2:40 P.M. "Hirsutism in the Female"
Dr. C. R. Webb, Ripley, Tennessee
- 2:40-3:00 P.M. "Anomalous Conditions in Abdominal Surgery"
Dr. William T. Satterfield, Memphis, Tennessee
- 3:00-3:20 P.M. "Chemopallidectomy — An Effective Treatment for Parkinsonism"
Dr. A. Roy Tyrer, Memphis, Tennessee
- 3:20-3:40 P.M. Intermission
- 4:00-4:20 P.M. Open
- 4:20-4:40 P.M. "The Differential Diagnosis of Pulmonary Tuberculosis"
Dr. Thomas B. Haltom, Nashville, Tennessee
- 4:40-5:00 P.M. "Pelvic Pain in the Absence of Pelvic Disease"
Dr. Edwin L. Williams, Nashville, Tennessee
- 5:00-6:30 P.M. Social Hour
- 6:30 P.M. Dinner

After dinner speaker: Dr. Benjamin H. Robbins, Professor of Anesthesiology, Vanderbilt University, Nashville, Tennessee. Subject: "White Water and Black Magic."

American College of Chest Physicians

The 23rd Annual Meeting of the American College of Chest Physicians will be held at the Hotel Commodore in New York City, May 29-June 2. In addition to formal presentations on heart and lung diseases, there will be a number of symposia, round table luncheon discussions, seminars and motion pictures.

American Goiter Association

The 1957 meeting of the American Goiter Association will be held in the Statler Hotel, New York City, May 28-30, 1957. The program for the three day meeting will consist of papers and discussions dealing with the physiology and diseases of the thyroid glands.

Woman's Auxiliary to the American Medical Association

New York State is serving as host to the American Medical Association and its Woman's Auxiliary. Mrs. Harry F. Pohlmann of Middletown, New York, a past President of the Woman's Auxiliary to the Medical Society of the State of New York, has been named Convention Chairman for this meeting.

Headquarters for the Auxiliary meeting will be the Hotel Roosevelt at Madison Avenue and 45th Street, from June 3 to 7. This is within walking distance of the Waldorf-Astoria Hotel, where the A.M.A.'s House of Delegates meet, and proximity to Fifth Avenue and Madison Avenue shops, theatres and innumerable points of interest, make the location of headquarters ideal.

Registration will open on Sunday, June 2, 11:30 a.m. to 4 p.m. and continue through Thursday. There will be Round Table discussions of interest and educational value. The general meeting will be held Tuesday, Wednesday and Thursday, and a Board of Directors meeting at one o'clock on Thursday, and a Post-Convention Workshop for State Presidents, Presidents-Elect and National Committee Chairmen on Friday, June 7. Social activities are scheduled for each day, June 3-6.

A cordial welcome awaits each doctor's wife! Do come!

Mountaintop Medical Assembly

The fourth annual meeting will be held in Waynesville, North Carolina on June 20-22. This course gives 15 hours credit toward continued membership in the American Academy of General Practice. Speakers include: Dr. Ellard M. Yow, Baylor University; Dr. Robert T. Tidrick, University of Iowa; Dr. J. Willis Hurst, Emory University; Dr. C. Ronald Stephen, Duke University; Dr. Harry R. Draper, University of Pennsylvania; and Dr. Lawrence L. Hester, Medical College of South Carolina. For further information write Dr. J. Frank Hammett, Jr., Box 669, Waynesville, N. C.

Medical Assistants Society of Tennessee

The second annual meeting will be held in Bristol, Tennessee-Virginia, on May 3-5 at the General Shelby Hotel. The Bristol Association plans to make this meeting a success. A conducted tour of the Massengill Pharmaceutical Plant is set for the afternoon of the 3rd. The Knoxville Medical Assistants will be hostesses for the luncheon on the 4th. Dr. R. B. Wood, President of the State Medical Association will be Guest Speaker at the banquet, Saturday evening.

PLACEMENT SERVICE

The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 112 Louise Ave., Nashville 5, Tenn.

Locations Wanted

A 33 year old married physician, Congregationalist. Graduate Emory University. Priority IV. Now completing surgical residency. Desires surgical practice. Available July, 1957. LW-255

A 30 year old single physician, Protestant. Graduate University of Louisville. Priority IV. Completing residency in General practice. Desires general practice, clinical or industrial, in community 5,000-50,000. Available August 1, 1957. LW-256

A 31 year old married physician, Church of Christ. Graduate University of Tennessee. Priority IV. Desires private or clinical practice in general surgery in community over 10,000. Available July, 1957. LW-257

A 28 year old married physician. Presbyterian. Graduate of Cornell University. Completing military obligation. Desire general practice in community of 10,000. Available August, 1957. LW-258

A 36 year old married physician, Seventh Day Advent. Graduate College of Medical Evangelists. Priority IV. Desire private or group practice in general surgery. Available April, 1957. LW-259

A 29 year old married physician. Graduate Jefferson Medical School. Desire general practice. Available July, 1957. LW-261

A 26 year old married physician, Methodist. Graduate University of Tennessee. Currently on duty as Naval doctor. Prefers general practice in Community of 1,000 or more. Available July, 1957. LW-262

A 37 year old married physician, Methodist. Graduate Vanderbilt University. Priority IV. Desire associate surgery with some general practice. Available now. LW-263

A 29 year old married physician, Methodist. Graduate Vanderbilt University. Priority IV. Currently Resident in Pediatrics. Desires clinical, assistant or associate practice in Pediatrics in Nashville vicinity. Available July, 1957. LW-264

A 36 year old married physician, Baptist. Graduate University of Illinois. Now completing service. Desires clinical, assistant or associate in general surgery. Available November, 1957. LW-265

A 27 year old married physician, Episcopalian. Graduate Vanderbilt University. Priority IV. Desires practice in Internal Medicine. Available October, 1958. LW-266

A 30 year old married physician. Graduate Temple University. Priority IV. Desires practice in Internal Medicine. Has experience in Cardiology. Desires community of 50,000 to 750,000. Available June, 1957. LW-267

A 28 year old married physician, Presbyterian. Graduate of University of Tennessee. Priority IV. Desires general practice in community with equipment available. Available now. LW-238

A 28 year old married physician, Methodist. Graduate of Medical College of Georgia. Completes service in October, 1957. General practice and surgery in community of 5,000-30,000. Available October, 1957. LW-269

Physicians Wanted

West Tennessee community desires physician. House and office available, community will buy equipment. Hospital to be built. This town has been without a doctor for twenty years, has many attractions for a physician. PW-59

Community in Middle Tennessee with trade area of 1,300 desires physician for general practice. 50-bed hospital located ten miles away. Housing and office available. PW-62

Town in West Tennessee with population of 1,000 desires physician. Housing, office and office space available.

Town in East Tennessee with trade area of 10,000 desires general practitioner. One other physician in town. 16-bed hospital in town. Adequate office equipment already available. PW-68

Physician in south central Tennessee community of 7,500 desires associate. Office equipment available. Town has 31 bed hospital. PW-86

Physician leaving to go into Public Health work needs replacement in northeastern Tennessee town of 800. Equipment is available. Office space adequate. PW-87

Physician selling practice, equipment. All can be financed to fit needs of physician interested in locating in this mid-eastern Tennessee community of 8,000. Excellent opportunity to take over established practice. PW-88

Journal of the Tennessee State Medical Association

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Number 5

Abstract of the Proceedings of the House of Delegates of the Tennessee State Medical Association Nashville, April 7-9, 1957

FIRST SESSION, SUNDAY, APRIL 7

The First Session of the House of Delegates was called to order at 1:15 p.m. in the Colonial Ballroom of the Maxwell House in Nashville with the Speaker of the House, Dr. Robert N. Buchanan, Jr., of Nashville, presiding. The invocation was given by John H. Burkhart, M.D., Knoxville. Prayer of Dr. Burkhart: "Supreme physician of us all, we raise our prayer to thee. Make us Thy servant, Lord, and may our tasks be to set free Thy children from the dread of pain and hopeless agony. Walk hand in hand with us, dear Lord, as to each house we go and may we through Thy grace impart some of Thy personal glow, which brings us the sun of inspired hope to melt away the snow. If death must walk with us today to nullify our skill, Lord, at least allow us to adopt his stubborn will; to help alleviate any fear and peace and calm and still if by Thy blessing if we may aid to compensate for those recalled, then may we have Thee at our side and feel Thy presence near. Look kindly, Lord, on us below and guide our trembling hands. Give us an inkling of the love of Him who understands that man cannot always be strong when ebbs life's shifting sands, for we are weak without Thy aid and always we can err. Inspire us with Thy blessings of success and faith. Amen."

The Speaker called upon Dr. O. Reed Hill, Lebanon, Chairman of the Credentials Committee, to determine if a quorum was present. Dr. Hill reported that a quorum was present in the House of Delegates.

The Speaker stated to the House that the minutes of the last session had been reproduced in the JOURNAL and requested that a

motion be presented to adopt the minutes as they had been printed. A motion was made by Dr. D. C. Seward of Nashville to accept the minutes as printed; the motion being duly seconded was adopted. The minutes of the last session as published in the May, 1956, issue of the JOURNAL were approved.

Speaker of the House, Dr. Buchanan, announced the personnel of the several reference committees, which are as follows:

Committee on Credentials

O. Reed Hill, M.D., Chairman, Lebanon
W. E. Anderson, M.D., Dyersburg
E. L. Caudill, Jr., M.D., Elizabethton

Committee on Amendments to the Constitution and By-Laws

John R. Thompson, Jr., M.D., Chairman,
Jackson
Carroll H. Long, M.D., Johnson City
Louis Rosenfeld, M.D., Nashville

Committee on Resolutions

C. M. Hamilton, M.D., Chairman, Nashville
George L. Inge, M.D., Knoxville
J. Malcolm Aste, M.D., Memphis

Committee on Reports of Officers

William J. Sheridan, M.D., Chairman,
Chattanooga
B. O. Garner, M.D., Union City
J. Harvill Hite, Jr., M.D., Pulaski

Committee on Reports of Committees

Ernest G. Kelly, M.D., Chairman, Memphis
J. Thomas Bryan, M.D., Nashville
Dan R. Thomas, M.D., Knoxville

Committee on Outstanding G. P. Award

A. M. Patterson, M.D., Chairman, Chattanooga

John R. Thompson, Jr., M.D., Jackson

Chas. C. Trabue, IV, M.D., Nashville

In the absence of Dr. Trabue on the Reference Committee for Outstanding General Practitioner Award, Dr. R. B. Wood assisted the committee in selecting the Outstanding G. P. nominees of the year.

The Speaker called for petitions of new Charters for County Medical Societies, and Dr. W. E. Anderson, Dyersburg, was recognized.

Dr. Anderson reported that the Dyer Lake & Crockett County Medical Society and the Obion County Medical Society wished to relinquish their Charters and petition the House of Delegates for a Charter for the consolidation of these societies, to be known as the Northwest Tennessee Academy of Medicine.

As Councilor for the Ninth District, Dr. Anderson recommended the approval of the petition to the House of Delegates. The motion to issue the Charter was made, duly seconded and adopted and the House granted a Charter to the Northwest Tennessee Academy of Medicine. Dr. W. E. Anderson accepted the Charter for the Society.

Dr. Warren Rutledge asked permission of the House to present a petition for a Charter from the Marshall County Medical Society. He read the petition.

The Speaker called upon Dr. Henry Kirby-Smith, Councilor from the District for Marshall County, and Dr. Kirby-Smith recommended that a Charter be granted. The motion was made by Dr. Kirby-Smith, duly seconded and adopted and a Charter was granted to the Marshall County Medical Society. The Charter was received by Dr. Rutledge.

Amendments on the Table

The next order of business was the consideration of Constitutional Amendments which had remained on the table since the last annual session. The Speaker stated that at the last session of the House, the new By-Laws were adopted, but it required that any amendments or change in the Constitution should lay on the table for one

year. Since the Constitution had been revised, the entire Constitution had been on the table for one year and was before the House for action.

The Speaker called upon Dr. John R. Thompson, Chairman of the Reference Committee on Amendments to the Constitution and By-Laws. Dr. Thompson stated the changes in the Constitution and moved its adoption. The motion was duly seconded. The question was called for and the motion was put to a vote. Following the voting, the Speaker announced that the *motion had carried and the Constitution was adopted*. (See pages 216 to 224 for context of Constitution and By-Laws.)

Introduction of Amendments

Speaker Buchanan called the introduction of any proposed amendments to the Constitution and By-Laws. None were presented to the Constitution. Dr. E. L. Caudill, Jr., Elizabethton, presented three proposed amendments to the By-Laws. These were as follows: "Amend Chapter VIII, Section 7 of the By-Laws by striking the last sentence which reads, 'The Committee shall elect its own chairman' and insert so that this sentence shall read, 'The Chairman shall be appointed by the Board of Trustees.'"

"Amend Chapter VIII, Section 10, by striking the last sentence in this section which reads, 'The Committee shall elect its Chairman' and insert so that this sentence shall read, 'The Ex-president which has served on the Committee for the two previous years will serve as Chairman during the third year of his term on the Committee.'"

"Amend Chapter VIII, Section 13, by striking the last sentence in the first paragraph which reads, 'The Committee shall organize itself and elect its own Chairman, Vice-Chairman and Executive Sub-Committee,' and insert so that this sentence shall read, 'The Chairman, Vice-Chairman and Executive Sub-Committee shall be appointed by the Board of Trustees. The Committee shall organize its program of work.'"

There being no further amendments, the Speaker announced that the proposed amendments would be referred to the Ref-

erence Committee on Constitution and By-Laws, Dr. John R. Thompson, Jr., Chairman. Action on these amendments would be reported out on Tuesday, April 9.

Introduction of Resolutions

The Speaker stated that the next order of business was the introduction of resolutions. He pointed out that the delegates should not discuss nor debate the resolutions at the time of introduction, but should simply read them in order that the Chair could get the resolutions before the proper reference committee. The Speaker suggested that all those interested in resolutions that were introduced, should appear before the Reference Committee on Resolutions and express their feelings about them. It was stated that full opportunity would be given for debate and discussion when the resolutions are reported out by the Reference Committee on Resolutions on Tuesday, April 9.

Dr. James C. Gardner, Nashville, introduced Resolution No. 1. This resolution dealt with the problem of some county medical societies containing active dues paying members who were not active members of the Tennessee State Medical Association. The resolution stated that these societies apparently did not have requirements wherein their members should be active members of TSMA. The resolution further pointed out that this was a violation of the Constitution and By-Laws and the Charter of the Tennessee State Medical Association. The resolution further resolved that all county medical societies be reminded through their respective secretaries of the above conditions and urge that society regulations be brought into line in order that they would conform with the requirements of TSMA. The Resolution was referred to the Reference Committee on Resolutions.

Dr. J. Thomas Bryan, Nashville, introduced Resolution No. 2 concerning the free choice of physicians by federal employees. The resolution stated that veiled threats often are used to induce federal employees to accept medical treatment from a physician other than one of his choice. It was also stated that the Nashville Academy of Medicine had gone on record as opposing this policy by the federal government and

the Board of Directors of the Nashville Academy of Medicine requested that the matter be brought before the House of Delegates of the Tennessee State Medical Association. The House of Delegates of TSMA was asked to take cognizance of the present limitations on federal employee's choice of physician under the Federal Employees' Compensation Act and it was requested that appropriate action be instituted through the American Medical Association to change the Workmen's Compensation Law to allow injured or sick federal employees a free choice of physician. The delegates from Tennessee to the AMA were requested to introduce a resolution in the House of Delegates of the American Medical Association to implement a change in the Law. The resolution was referred to the Reference Committee on Resolutions.

Resolution No. 3. Dr. L. W. Edwards, Nashville, introduced a resolution dealing with the Indigent Hospitalization Act in Tennessee. The resolution stated that the House of Delegates of the American Medical Association had adopted a policy in 1938 relative to the indigent and the responsibility of the community for such persons. The resolution also pointed out that in 1951, the Public Service Committee of the Tennessee State Medical Association met with the Governor and reached an agreement concerning the following: (1) That there was an acute need in Tennessee for medical care and treatment of the indigent sick. (2) That the doctors of medicine would provide the care without cost to the indigent provided hospitalization facilities would be made available. The resolution went into detail in explaining how the Study Commission on Indigent Hospitalization was organized and appropriations made by the Legislature from 1953 up to date. The resolution stated that the amendments to the Federal Social Security Act made it difficult to administer public health measures in the state where funds allocated by the Congress for public health services were being distributed through the Department of Public Welfare. The resolution concluded by requesting the delegates from Tennessee to the House of Delegates of the American Medical Association to introduce a resolu-

tion requesting the Congress of the United States to amend the Federal Social Security Act in such a way as to eliminate from the act such phraseology as now exists which has the effect of compelling a State to change its total procedure of administering its public health program. Specifically this change should be made in such a way as to require any appropriation made by the Congress for the care of the indigent sick to be allocated to the U. S. Public Health Service for reallocation to the several State Departments of Public Health rather than the Department of Public Welfare, for administration by the State Department of Public Welfare in order to avoid duplication of services at the state and local level of government. The resolution further pointed out that the Commissioner of the Tennessee State Department of Health should call this matter to the attention of the several state and territorial health officers of the nation and that the resolution should be called to the attention of the Tennessee Senators and Representatives in the Congress. The Resolution was referred to the Reference Committee on Resolutions.

Resolution No. 4. Dr. Duane Carr, Memphis, introduced a resolution concerning the Cooperative Hospital Program. The resolution stated that TSMA recognizes the need and desirability of continually improving the facilities and the quality of medical care provided for all patients in the State, and that the State Medical Association approves the principles of postgraduate instruction in all phases of medical knowledge being offered to practicing members of the profession by the University of Tennessee College of Medicine as well as the principle of technical training offered to technicians and technologists in ancillary medical activities. The resolution stated that the aims of the Cooperative Hospital Plan could be effected without advancing the encroachment of Government subsidization and control of medical teaching and practice, and offers the cooperation of the Tennessee State Medical Association with the University of Tennessee in developing a curriculum to achieve these ends. The resolution requested the Tennessee State Medical Association to go on record as strongly opposing the use of

federal funds in the development of the Cooperative Hospital Plan and that the University of Tennessee be urged to cease participation in this plan *as currently operated* at the earliest possible date. The officers of the University of Tennessee will be asked to seek authority to divert any remaining available funds into medical research channels or return such funds to the United States Treasury. The resolution further requested that the educational and research aims of the Cooperative Hospital Plan be accomplished without federal aid through further extension of the postgraduate training program of the University of Tennessee College of Medicine, and that the representatives of the University of Tennessee, the Cooperative Plan and the Tennessee State Medical Association meet together to plan the curriculum and to attain these objectives. The resolution was referred to the Reference Committee on Resolutions.

Resolution No. 5. Dr. Robert M. Finks, Nashville, presented a resolution concerning a Physician of the Year Award. The resolution pointed out that the Association in years past had adopted the policy of selecting an outstanding general practitioner of the year. It was pointed out that the Association should recognize annually any outstanding service by one of its members in the arts and science of medicine as well as civic and other contributions to the welfare of the public. It was also pointed out that if an award to the outstanding general practitioner of the year was made, it should be done by the Tennessee Academy of General Practice. The resolution requested that the House of Delegates terminate making an award to the outstanding general practitioner at the conclusion of the 1957 meeting and that the Association institute an annual Physician of the Year Award to be made at each annual meeting beginning in 1958 under a similar procedure as now used for selecting the outstanding general practitioner of the year. The resolution urged all county societies comprising the Tennessee State Medical Association to participate in the nomination of candidates for the Annual Physician of the Year Award. This

resolution was referred to the Reference Committee on Resolutions.

Resolution No. 6. Dr. B. F. Byrd, Sr., Nashville, Chairman of the Insurance Committee introduced a resolution for business expense insurance coverage. The resolution was read by Dr. George Inge of Knoxville. This resolution stated that the American Casualty Insurance Company of Pennsylvania had a good plan to offer and he recommended that the House approve the plan for those physicians who wished to take advantage of it. The Resolution was referred to the Reference Committee on Resolutions.

The Speaker called for introduction of additional resolutions and since there were none, he moved to the next order of business.

Reports of Officers

The Speaker announced that the House would hear the reports of the officers and asked that the reports be held to a five-minute limit, if possible. Abstracts of reports of all officers will be found on page 201 of this issue of the JOURNAL.

The report of the President, Dr. R. B. Wood, was read to the House, pointing out the many requirements of the Association and particularly upon the President during the past year. He outlined his activities during his tenure of office. Dr. Wood pointed out the increasing work load in the headquarters office and particularly commented upon the heavy work conducted by the Board of Trustees. The report of the President was referred to the Reference Committee on Reports of Officers.

Dr. Addison B. Scoville, Jr. reported for the Secretary-Editor and he outlined the difficulty in keeping the JOURNAL of TSMA equal to the journals of other state medical associations. The report dealt with the number of scientific pages as compared with the number of advertising pages in the JOURNAL for the years 1951 through 1956. In addition, the report stated that the many facets of the Association's activities had been well recorded in the pages of the President, the Executive Secretary and Public Service Director. The report of the Secretary-Editor was referred to the Reference Committee on Reports of Officers.

Dr. James C. Gardner, Chairman of the Board of Trustees and Treasurer, read his prepared report relating to the activities of the work and decisions rendered by the Board of Trustees during the past year. The report discussed in detail the financial condition of the Association and statistical information was rendered to the House. The report was referred to the Reference Committee on Reports of Officers.

Dr. D. C. Seward, Nashville, Chairman of the Council, read his prepared report. It dealt with the professional and ethical conduct of members of the Association throughout the year. Dr. Seward's report dealt with each district and he reported particularly upon one incident that occurred in the Cocke County Medical Society, which was presented to the Council for determination. The report also touched upon problems involving malpractice suits. This report was referred to the Reference Committee on Reports of Officers.

Mr. J. E. Ballentine, Executive Secretary, rendered his report of activities for the year 1956, together with a review of the status of membership and other affairs of the Tennessee State Medical Association. The report dealt with the activities of the Executive Secretary and the entire headquarters office staff and included many of the problems confronted with the increasing work in the headquarters office. The report was referred to the Reference Committee on Reports of Officers.

Reports of Committees

Abstracts of all Committee Reports will be found beginning on page 203 of this issue of the JOURNAL.

The Speaker pointed out that some of the committees were merely stand-by committees and would have nothing to report. The active committees would be given necessary time to make their reports if the Committee Chairman felt that additional time was indicated.

The following committee reports were submitted:

Standing Committees

Scientific Work and Editorial Board—
Dr. Addison B. Scoville, Jr., Nashville,
in the absence of Dr. R. H. Kampmeier,
Secretary-Editor

Legislative and Public Policy—Dr. W. W. Wilkerson, Jr., Nashville

Committee on Insurance—Dr. George Inge, Knoxville, reporting for Dr. B. F. Byrd, Sr., Chairman

Memoirs Committee—Dr. Henry L. Douglass, Nashville

Symposium Postgraduate Education Committee—Dr. F. L. Roberts, Memphis

Committee on Cancer—Dr. Ralph H. Monger, Knoxville

Grievance Committee—Dr. A. M. Patterson, Chattanooga

Prepaid Insurance Committee—Dr. James A. Kirtley, Jr., Nashville

Public Service Committee—Dr. L. W. Edwards, Nashville

Rural Health Committee—Dr. W. N. Cook, Columbia

Standing committees not reporting were: Committee on Hospitals—Dr. John W. Adams, Jr., Chairman, Chattanooga

Liaison Committee to Public Health Department—Dr. John M. Lee, Chairman, Nashville

Physical Therapy Committee—Dr. George W. Shelton, Chairman, Chattanooga

Department of Public Welfare—Dr. W. W. Hubbard, Chairman, Nashville

All standing Committee reports were referred to the Reference Committee on Reports of Committees.

Nominating Committee

At this time in the session, the Speaker appointed Dr. L. W. Edwards to act as temporary Chairman for the Middle Tennessee delegates; Dr. John R. Thompson, Jr. to act as temporary Chairman for the West Tennessee delegates and Dr. Hiram Laws to act as temporary Chairman of the delegates from East Tennessee, in order to elect a permanent nominating committee.

The Speaker called for a short recess in order that representatives of the three grand divisions of the state could caucus and elect a permanent nominating committee.

Following the recess, the Speaker called the House of Delegates to order and announced the personnel of the Nominating Committee which consisted of Dr. J. Malcolm Aste, Memphis; Dr. Baker Hubbard, Jackson; Dr. B. O. Garner, Union City; Dr. J. Thomas Bryan, Nashville; Dr. Ogle Jones,

Centerville; Dr. O. Reed Hill, Lebanon; Dr. Ralph H. Monger, Knoxville; Dr. Rae Gibson, Greeneville; and Dr. A. M. Patterson, Chattanooga. Dr. Bryan was reported as Chairman of the Nominating Committee.

The Speaker announced the House would continue with hearing committee reports of the special committees. The following reports were rendered:

Special Committees

Committee on Industrial Health—Thomas A. Lincoln, M.D., Chairman (Report read by Executive Secretary)

Liaison Committee to United Mine Workers of America—B. M. Overholt, M.D., Chairman (Report read by C. E. Newell, M.D., Chattanooga)

Committee on Veterans Affairs—Ernest G. Kelly, M.D., Chairman

Committee on Tuberculosis—Robert L. McCracken, M.D., Chairman (Report read by Executive Secretary)

Committee on Mental Health—Frank Luton, M.D., Chairman

Health Project Contest—Mrs. Clarence Landham, Chairman, Chattanooga

Legal Liaison to Bar Association—Geo. K. Carpenter, M.D., Chairman

Study Committee for Expansion of General Practice of UMWA Welfare & Retirement Fund—Geo. S. Mahon, M.D., Chairman

Headquarters Building, Furnishings and Appointments Committee—Daugh W. Smith, M.D., Chairman (Report read by Executive Secretary)

Study Committee on Legal Definition of Medicine and Medical Practice—Frank Luton, M.D., Chairman

Tennessee Committee to the American Medical Education Foundation—Joseph W. Johnson, Jr., M.D., Chairman

Special Reports

President, Woman's Auxiliary—Mrs. E. T. Pearson, Elizabethton

Report from AMA Delegation—Chas. C. Smeltzer, M.D., Chairman

The Speaker announced that this ended the reports of the special committees and special reports and the reports would be re-

ferred to the Reference Committee on Reports of Committees.

The following committees did not report:

Committee on General Practice—E. L.

Caudill, Jr., M.D., Chairman

Emergency Medical Service Committee—

Frank Moore, M.D., Chairman

Advisory Committee to the Woman's Aux-

iliary—Roy A. Douglass, M.D., Chair-

man

Committee on Blood Banks—M. L. Trum-

bull, M.D., Chairman

Committee on Autopsy—Leland M. John-

ston, M.D., Chairman

Labor Liaison Committee—Baker Hub-

bard, M.D., Chairman

Liaison Committee to Public Health Coun-

cil—L. W. Edwards, M.D., Chairman

Liaison Committee to Tennessee State

Dental Association—R. David Taylor,

M.D., Chairman

Liability Insurance Study Committee—

Carrol C. Turner, M.D., Chairman

Introduction of Additional Resolutions

The Speaker announced that the House was proceeding on schedule and the introduction of additional resolutions or amendments were in order.

Resolution No. 7. Dr. James C. Gardner, Nashville, Chairman of the Board of Trustees, introduced a resolution which pointed out the necessity for additional personnel in the headquarters staff of the Tennessee State Medical Association. The resolution outlined the manner in which the work had grown over recent years and that many additional services were required of the headquarters office personnel. The resolution stated that if additional personnel was added, financing would have to be approved by the House of Delegates. The resolution recommended that the House of Delegates instruct the Board of Trustees to study and re-evaluate the work conducted by the headquarters office staff and to determine to what extent additional personnel may be required. The Board was directed to submit a recommendation on this matter to the House of Delegates at a future meeting. The resolution was referred to the Reference Committee on Resolutions.

The Speaker called for supplemental reports.

Supplemental Reports

Dr. James C. Gardner presented a supplemental report of the Board of Trustees. The report stated that the Board was called into special session on January 13, 1957 for the purpose of discussing the policy that should be adopted by the Tennessee State Medical Association relative to accepting federal funds to be used in further implementing the indigent hospital act in Tennessee. He stated that meeting with the Trustees were members of the Public Service Committee, the Commissioner of Public Health, and other representatives of the State Health Department. Dr. Gardner stated that after thoroughly discussing the matter, the Board of Trustees adopted the following motion: "That the Board instruct the Chairman to notify Governor Frank Clement that the Board of Trustees approved the plan to use federal funds to implement the present indigent hospital act, with administration to be carried out through the State Health Department." Dr. Gardner stated that this action should be ratified or further acted upon by this House of Delegates. Following the report, the Speaker referred the supplemental report to the Committee on Reports of Officers.

The Speaker called for introduction of fraternal delegates and guests. There being none, he moved to the next item of business.

The Speaker called for a report from the Reference Committee on the General Practitioner Award and Dr. A. M. Patterson submitted to the House the names of three nominees to receive the outstanding General Practitioner Award. The names of Dr. James Ray Lewis, Ripley; Dr. Fred A. Martin, Cumberland City and Dr. J. W. Ousler, Humboldt were submitted to the House.

Dr. G. H. Berryhill, Jackson, made a three-minute nominating speech in behalf of Dr. Ousler. His remarks dealt with the life of Dr. Ousler as a practitioner of medicine in his community and the contributions that he had made over many years of service.

Dr. A. Fount Russell, Clarksville, spoke in behalf of Dr. Fred A. Martin, eulogizing him

as a man worthy of the honor of outstanding general practitioner of the year and cited many of the contributions that Dr. Martin had made to medicine and to his community.

Following the brief nominating speeches, the Speaker asked members of the House to prepare their ballots. Further announcements were made by the Speaker relative to the personnel of the nominating committee. Several members of the House had requested that the names of the Nominating Committee again be read.

Following the counting of the ballots, the Speaker announced that Dr. Fred A. Martin of Cumberland City had been elected by the House of Delegates to receive the outstanding general practitioner award for 1957.

Election of Councilors

The Speaker again read the names of the Nominating Committee. He stated that five councilors were to be elected from the evenly numbered districts of the State. The Speaker called upon Dr. J. Thomas Bryan, Chairman of the Nominating Committee, to make his report.

The Nominating Committee reported giving the suggested names for Councilors. The election of Councilors then ensued with results as follows:

Second District—Dr. Joseph L. Raulston, Knoxville

Fourth District—Dr. John T. Moore, Jr., Algood

Sixth District—Dr. D. C. Seward, Nashville

Eighth District—Dr. Warren C. Ramer, Lexington

Tenth District—Dr. Duane Carr, Memphis

The Speaker called for additional amendments or resolutions and there being none, he asked if any further old business was to be presented. There being none, the Speaker called for any additional new business. No new business was introduced.

The House recessed at 5:50 P.M. until 9:00 A.M. Tuesday, April 9.

TUESDAY MORNING SESSION, APRIL 9

The House of Delegates reconvened at 9:10 A.M. in the Old South Room of the Maxwell House with Dr. Robert N. Buchanan, Jr., presiding.

Dr. O. Reed Hill, Chairman of the Credentials Committee, reported a quorum present.

The first order of business was the introduction of guests. The Speaker introduced Mr. Chas. L. Cornelius, Sr., Nashville, attorney for the Tennessee State Medical Association.

The Speaker continued with the next order of business requesting that any charters of county medical societies to be surrendered or presented, be done so at this time. There were no charters to be surrendered or new petitions presented.

Introduction of Additional Amendments and Resolutions

There being no amendments to be introduced, the Speaker requested introduction of additional resolutions.

Dr. Ralph O. Rychener, Memphis, introduced a resolution referring to an editorial in the February, 1957, issue of the *Maine Medical Journal*, which called attention to the fact that certain medical doctors have used cycloplegic medicine on occasions at the request of optometrists. The resolution pointed out the many dangers attached to such indiscriminate procedures and further that the medical-legal aspect involves doctors of medicine. It was requested in the resolution that the editorial be spread upon the minutes of the TSMA and printed in the *TSMA JOURNAL*. This resolution was referred to the Reference Committee on Resolutions.

The Speaker stated that a total of eight resolutions had been presented to the House. There being no further resolutions, the Speaker moved to the next order of business.

Report of Reference Committee on Amendments

DR. JOHN R. THOMPSON, JR., Chairman

The following report was submitted.

Dr. Thompson stated that the Reference Committee had consulted relative to three amendments to the By-Laws. The Chairman stated that the three were all companion amendments and the procedure brings into conformity all of the standing committees which are appointed by the Board of Trustees. Dr. Thompson stated

that members of the House had copies of the Amendments in their work kits.

The first amendment would amend Chapter VIII, Section 7 of the By-Laws by striking the last sentence which reads "The Committee shall elect its own chairman" and insert so that this sentence shall read, "The Chairman shall be appointed by the Board of Trustees."

The Chairman of the Reference Committee recommended the adoption of this Amendment.

Upon motion duly made, seconded and carried, **the Amendment was adopted.**

The second Amendment would amend Chapter VIII, Section 10, by striking the last sentence of this section which reads "The Committee shall elect its Chairman," and insert so that this sentence shall read, "The ex-president which has served on the committee for the two previous years will serve as chairman during the third year of his term on the committee." The Reference Committee Chairman recommended that this Amendment be adopted. The motion was severally seconded, put to a vote and **the motion to amend Chapter VIII, Section 10 to the By-Laws was adopted.**

The third Amendment was to amend Chapter VIII, Section 13, by striking the last sentence, first paragraph which reads, "The Committee shall organize itself and elect its own Chairman, Vice-Chairman and Executive Sub-Committee," and insert so that this sentence shall read, "The Chairman, Vice-Chairman and Executive Sub-Committee shall be appointed by the Board of Trustees. The Committee shall organize its program of work." The Chairman of the Reference Committee moved that this Amendment be adopted. The motion was seconded, put to a vote and **the Amendment to Chapter VIII, Section 13 to the By-Laws was adopted.**

It was moved that the report of the Reference Committee on Amendments be adopted as a whole. Upon motion duly made, seconded and carried, **the report of the Reference Committee on Amendments was adopted as a whole.**

Report of Reference Committee on Resolutions
DR. C. M. HAMILTON, Chairman

The Speaker next called for the report of

the Reference Committee on Resolutions, requesting the Chairman, Dr. C. M. Hamilton, to make his report.

Dr. Hamilton stated that in earlier action of the House, an additional resolution was introduced which his committee had not had an opportunity to study and he requested the committee members to be looking over the resolution for recommendation.

Resolution on County Society and TSMA Membership

No. 1

By: CHAS. C. TRABUE, IV, M.D.

"WHEREAS, it has been found that some county medical societies contain active dues paying members who are not active members of the Tennessee State Medical Association, and

"WHEREAS, those societies do not apparently have requirements in their Constitution, By-Laws or governing rules requiring active members of the county society to be active members of TSMA, and

"WHEREAS, Article IV, Section 2 of the Constitution of the Tennessee State Medical Association states that "the active members of the Tennessee State Medical Association *shall* be active members of the Component Medical Societies who have been certified to the Secretary of TSMA and whose dues have been paid for the current year, and

"WHEREAS, the actual charter issued to county societies by the TSMA through this House of Delegates, gives its members honors and privileges so long as it conforms to the Constitution and By-Laws of the Tennessee State Medical Association,

"NOW THEREFORE BE IT RESOLVED, that all county societies be reminded through their respective Secretaries, of the above conditions, and

"BE IT FURTHER RESOLVED, that any county society whose regulations do not conform, shall take necessary action to bring the Society into conformity with requirements of the TSMA, and thereby require all active dues paying members to be active members of the Tennessee State Medical Association."

The Reference Committee recommended the adoption of this Resolution. Dr. Phillips of Bristol questioned this Resolution

pointing out difficulties involved in the Sullivan-Johnson County Medical Society where members of that society reside in Virginia and Tennessee. Dr. Phillips stated that he believed the Resolution would destroy the esprit de corps of some members in his society.

The Speaker pointed out that this was a question of dual membership and that it affected the number of delegates to the AMA.

Dr. Stone of Chattanooga stated that in his society, some doctors belong to the Alabama Medical Society and practiced in the southern part of Tennessee, Alabama and Georgia.

Dr. Carroll Long, Johnson City, asked if it were possible to amend the Resolution in its last line to state "and thereby require all active dues-paying members to be active members of a state medical association." Dr. Long requested permission to make this amendment to the Resolution. The motion was made, duly seconded that the amendment be adopted. The matter was put to a vote and carried and, **the Amendment to Resolution No. 1 was adopted.**

The Amendment had the effect that members of a county society must be a member of a state medical association in a situation where they live close to state lines.

Following the adoption of the Amendment, the Speaker called for action on the Resolution and the motion was made, duly seconded and carried, and **the Resolution as amended was adopted.**

Resolution on Free Choice of Physicians by Federal Employees No. 2

By: J. THOMAS BRYAN, M.D.

"WHEREAS, the choice of physician by any American is a privilege of a free people, and

"WHEREAS, this choice of a physician cannot be exercised at will under the Federal Employees' Compensation Act, and

"WHEREAS, real or veiled threats are often exercised to further induce the employee to accept medical treatment from a physician other than his choice, and

"WHEREAS, The Board of Directors of the Nashville Academy of Medicine has gone

on record as opposing any law, policy, or action by the Federal Government which in any way jeopardizes the freedom of the American people, and

"WHEREAS, the Board of Directors of the Nashville Academy of Medicine has requested that the delegates of the Nashville Academy of Medicine bring this matter before the House of Delegates of the Tennessee State Medical Association.

"NOW THEREFORE BE IT RESOLVED, that the House of Delegates of the Tennessee State Medical Association take cognizance of the present limitations on Federal employee's choice of physician under the Federal Employees' Compensation Act, and

"BE IT FURTHER RESOLVED, that the Tennessee State Medical Association's House of Delegates recommends that appropriate action be instituted through the American Medical Association to change the Workmen's Compensation Law to allow injured or sick Federal employees free choice of physicians, and

"BE IT FURTHER RESOLVED, that the delegates to the AMA from the Tennessee State Medical Association be directed by this House to introduce a resolution in the House of Delegates of the American Medical Association to implement a change in the law, so as to allow injured or sick Federal employees free choice of physicians."

The Reference Committee recommended the adoption of this Resolution.

This Resolution was discussed by Dr. Carroll Long, Johnson City, and Dr. D. C. Seward of Nashville. Dr. Seward clarified a recent decision by the Supreme Court of Tennessee concerning the Workmen's Compensation Laws. Dr. Long withdrew his request to amend this resolution.

The Speaker stated the House was back to voting on the Resolution as originally presented. The motion was severally seconded, and the Resolution was put to a vote and **the Resolution was adopted.**

Resolution to Urge Congress to Revert Funds Approved for Public Health Through State Public Health Departments No. 3

By: L. W. EDWARDS, M.D.

"WHEREAS, In 1938 the House of Dele-

gates of the American Medical Association declared, 'that the complete medical care of the indigent is the responsibility of the community and the medical and allied profession, and that such care should be organized by local governmental units and supported by tax funds'; and

"WHEREAS, In 1951 the Public Service Committee of the Tennessee State Medical Association met with the Governor and reached an agreement concerning the following: (1) That there was an acute need for the State of Tennessee to assume some responsibility for the cost of hospitalization, medical care and treatment of the indigent sick. (2) The doctors of medicine, in agreement with the Governor, would without cost to the State of Tennessee, provide professional medical service to such patients. (3) A study would be made of plans to provide for hospitalization, medical care and treatment for indigent sick persons in Tennessee who were financially unable to pay the cost of hospital care and treatment; and

"WHEREAS, At the same time the Tennessee Legislature authorized a Study Commission on indigent hospitalization and appropriated \$10,000 to defray necessary expenses for the study; and

"WHEREAS, In 1953 the Tennessee Legislature appropriated \$75,000 to implement the program for the fiscal year July 1, 1954, to June 30, 1955. The first year seventy of the ninety-five counties in Tennessee adopted the program. In 1955-1956, the second year of the program, eighty-four of the ninety-five counties adopted the program. In 1956-1957, the third year of the program, eighty-six of the ninety-five counties adopted the program; and

"WHEREAS, In 1957 due to an amendment of the Federal Social Security Act, funds for medical care of the recipients of the Department of Public Welfare became available to Tennessee to be administered by the State Department of Public Welfare specifically earmarked for those persons on local Welfare rolls; and

"WHEREAS, The State of Tennessee (as well as some of our sister states) is now placed in the position of being forced to operate two indigent hospitalization programs, one in the Department of Public

Health and one in the Department of Public Welfare; and

"WHEREAS, The Hospital Service for the Indigent program conceived by and organized under the influence of the State Medical Association, and administered by the Department of Public Health is a locally controlled service designed for the purpose of furnishing bed, board, and any hospital service needed for the effective treatment of the ill or injured indigent as deemed necessary and ordered by the physician or surgeon in charge of the case; and

"WHEREAS, It is the desire of this Association that the Indigent Hospitalization Program in Tennessee continue to be administered by one agency, the Department of Public Health, and to the extent practical this administration by the Department of Public Health be initiated at the local level of government.

"NOW THEREFORE BE IT RESOLVED, That the Tennessee State Medical Association duly assembled in Nashville, Tennessee, on this the 7th day of April, 1957, does hereby instruct its delegates to the American Medical Association to introduce a resolution in the House of AMA petitioning the Congress of the United States to the end that Congress may be persuaded to amend the Federal Social Security Act in such a way as to eliminate from the Act such phraseology as now exists which has the effect of compelling a state to change its total procedure of administering its public health program. Specifically this change should be made in such way as to require any appropriation made by The Congress for the care of the indigent sick of the state to be allocated to the U. S. Public Health Service for re-allocation to the several State Departments of Public Health rather than the Department of Public Welfare, for administration by the State Departments of Public Health in order to avoid duplication of services at the state and local level of government.

"BE IT FURTHER RESOLVED, That the Commissioner of the Tennessee State Department of Public Health be requested to call this Resolution to the attention of the several state and territorial health officers of the nation, and further, that he use his

influence with the other state and territorial health officers in an effort to secure an appropriate resolution on this same subject approved by the Association of State and Territorial Health Officers.

"BE IT FURTHER RESOLVED, That a copy of this Resolution be called to the attention of the Tennessee Senators and Representatives in The Congress."

The Reference Committee recommended the adoption of this Resolution. There being no discussion, the question was called for, the motion was put to a vote, seconded and carried and **the Resolution was adopted.**

**Resolution on Cooperative Hospital Plan
No. 4**

By: DR. DUANE CARR

"WHEREAS, The Tennessee State Medical Association recognizes the need and desirability of continually improving the facilities for and the quality of medical care provided for all patients in the State of Tennessee, and

"WHEREAS, The Tennessee State Medical Association approves the principle of postgraduate instruction in all phases of medical knowledge being offered to practicing members of the profession by the University of Tennessee College of Medicine, as well as the principle of technical training being offered to technicians and technologists in ancillary medical activities, and

"WHEREAS, It is believed by the Tennessee State Medical Association that these aims of the Cooperative Hospital Plan can be effected without advancing the encroachment of Government subsidization and control of medical teaching and practice, and offers the cooperation of the Tennessee State Medical Association with the University in developing a curriculum to achieve these ends.

"BE IT RESOLVED, that the Tennessee State Medical Association go on record as strongly opposing the use of Federal funds in the development of the Cooperative Hospital Plan;

"That the officers of the University of Tennessee be urged to cease their participation in this plan as currently operated at the earliest possible date;

"That the officers of the University of Ten-

nessee be urged to seek authority to divert any remaining available funds into truly medical research channels, or else return the funds to the United States Treasury;

"That the educational and research aims of the Cooperative Hospital Plan be accomplished without Federal aid through further extension of the postgraduate training program of the University of Tennessee College of Medicine;

"And that representatives of the University of Tennessee, the Cooperative Plan and the Tennessee State Medical Association meet together to plan the curriculum and to attain these objectives."

The Reference Committee Chairman stated that this Resolution related to Postgraduate Education sponsored by the University of Tennessee School of Medicine and financed with funds furnished by the Federal government.

The Reference Committee recommended the adoption of the Resolution.

Dr. John Hughes, Memphis, addressed the House relative to the background of this Resolution. He related in detail the situation as it pertained to Resolution No. 4.

Dr. W. E. Scribner, Kingsport, President of the Tennessee Radiological Society, stated that his specialty group had voted to oppose the plan of using Federal funds for the Cooperative Hospital Plan.

Dr. Julian K. Welch, Brownsville, arose to speak on the Resolution.

Dr. Carroll Long, Johnson City, spoke concerning the Resolution. At the conclusion of Dr. Long's discussion, he recommended an Amendment, in that the seventh paragraph of the Resolution be deleted. A discussion ensued.

The Speaker re-stated Dr. Long's motion to delete the seventh paragraph of the Resolution completely. The motion to amend was seconded.

Dr. Duane Carr of Memphis discussed the amendment. Dr. Carr went into detail in favor of the original resolution and opposing the amendment as submitted by Dr. Long.

At this point, Dr. J. Thomas Bryan, Chairman of the Davidson County Delegation, requested permission from the House for an alternate delegate from Davidson County,

Dr. Jno. B. Youmans, Dean of the Vanderbilt University School of Medicine be allowed to speak on the Resolution. Permission was granted and Dr. Youmans addressed the House.

Dr. Malcolm Aste, Memphis, spoke concerning the Resolution.

Following discussion, Dr. Ernest G. Kelly, Memphis, moved that the motion to amend the Resolution be tabled. The motion was severally seconded. The speaker stated that a motion to table cannot be debated and the motion to table was put to a vote and **the proposed amendment was tabled.**

The Speaker stated that the House was back to discussing the original motion to adopt. Dr. R. H. Hutcheson spoke concerning the Resolution. He outlined in some detail his part relative to the Cooperative Hospital Program and the part by the State Health Department. Dr. Hutcheson quoted a list of appropriations by the Federal government to other programs in Tennessee.

Following Dr. Hutcheson's discussion, Dr. Harold B. Boyd of Memphis discussed the Resolution.

Dr. Boyd offered an amendment to the Resolution, to amend paragraph seven to delete the words, "the postgraduate training," and insert instead the word "This," so that paragraph seven would read **"that the educational and research aims of the Cooperative Hospital Plan be accomplished without Federal aid through further extension of this program of the University of Tennessee College of Medicine."** The motion was severally seconded. The Speaker re-stated the amendment to paragraph seven of Resolution No. 4 and there being no further discussion, the Speaker called for the question on the amendment. The amendment was put to a vote and carried and **the Amendment was adopted.**

The Speaker then asked for further discussion on the Resolution as amended. Dr. C. B. Roberts, Sparta, spoke on the Resolution where it concerned smaller hospitals. He asked for further clarification on the extent that such a program would improve the smaller hospitals.

Dr. Baker Hubbard, Jackson, requested permission of the House to read a letter written by Dr. Chester Jones, Pathologist

at the Madison County General Hospital, and who also was President of the Tennessee Association of Pathologists. Dr. Hubbard then read a letter written to him concerning this matter.

The Speaker recognized Dr. Ernest G. Kelly of Memphis. He stated that he believed the issue before the House had a lot to do with the future of medicine. Dr. Kelly spoke at length on the background affecting the Resolution and particularly referred to small hospitals built by Hill-Burton money and the large hospitals built by private funds. Dr. Kelly concluded his discussion by stating that if the destiny of medicine is left in the hands of men such as were in the House of Delegates and who have studied medicine, who have practiced medicine and who love medicine, it will be far safer than if it is left in the hands of those men, some of whom have never studied and who have never practiced medicine.

Following Dr. Kelly's discussion, the Chair recognized Dr. Chas. C. Trabue, of Nashville. Dr. Trabue discussed the Resolution after which he offered an amendment that the Resolution following the words "Be it resolved," be deleted, and the following paragraph inserted in its stead. "Be it resolved: that the Tennessee State Medical Association go on record as being opposed to the Cooperative Hospital Plan as originally proposed and be it further resolved that the Dean of the University of Tennessee be respectively requested to approve of no major change in the present plan until after he has consulted with the Tennessee State Medical Association through channels, which will be immediately worked out by him and the Board of Trustees of the Tennessee State Medical Association." The proposed amendment was seconded. The Chair recognized Dr. John Hughes of Memphis. Dr. Hughes asked the House whether or not it was to go on record as opposing the extension of federalization of medicine.

Dr. Malcolm Aste, Memphis, again discussed the Resolution after which he moved that the Amendment be tabled. The motion to table was seconded. The motion to table was then put to a standing vote and it indicated 42 in favor and 33 against. The Speaker announced that **the motion to table**

had been adopted, and the House was again back to the original motion as amended. Dr. Harold Boyd moved the previous question. The Speaker re-stated that the motion to adopt the Resolution as amended by Dr. Boyd was before the House. The motion having been duly seconded, was put to a vote and was passed by 56 to 18. **The Resolution as amended was adopted.**

Resolution on Physician of the Year Award
No. 5

By: ROBERT FINKS, M.D.

"WHEREAS, membership in the Tennessee State Medical Association is composed of physicians representing all fields of medicine, and

"WHEREAS, it is the consensus of the membership that the Tennessee State Medical Association should recognize annually outstanding service in the art and science of medicine, as well as civic and other contributions to the welfare of the public, by one of its members, and

"WHEREAS, the Outstanding General Practitioner of the Year Award presently made by the Tennessee State Medical Association does not take into consideration contributions made by physicians in other fields, and

"WHEREAS, it has been suggested that if an Outstanding General Practitioner of the year is named, the selection and award be made by the Tennessee Academy of General Practice.

"NOW THEREFORE BE IT RESOLVED, that the House of Delegates of the Tennessee State Medical Association terminate, effective at the conclusion of the 1957 meeting, the custom of making an annual Outstanding General Practitioner of the Year Award, and

"BE IT FURTHER RESOLVED, that the Tennessee State Medical Association institute an annual Physician of the Year Award, to be made at each annual meeting beginning in 1958 under a similar procedure as that now used for selecting the Outstanding General Practitioner of the Year, and

"BE IT FURTHER RESOLVED, that the Tennessee State Medical Association urges all of its component societies to participate

in the nomination of candidates for such an annual Physician of the Year Award."

The Reference Committee recommended the adoption of this Resolution. The question was called for, the motion was put to a vote and carried and **the Resolution was duly adopted.**

Resolution on Expense Insurance Coverage
No. 6

By: B. F. BYRD, M.D.

"WHEREAS, The Committee on Insurance believes that a plan for business expense insurance coverage might be helpful to those physicians in Tennessee desiring it, and

"WHEREAS, a plan has been presented by the American Casualty Insurance Company of Pennsylvania, and

"WHEREAS, such a plan should have the approval of this House of Delegates,

"NOW THEREFORE BE IT RESOLVED, that the House of Delegates approve a plan for Business Expense Disability Insurance Coverage submitted by representatives of the American Casualty Insurance Company of Pennsylvania."

The Reference Committee recommended the adoption of this Resolution. There being no discussion, the question was called for, the motion was seconded, put to a vote and carried, and **the Resolution was duly adopted.**

Resolution on Headquarters Office Personnel
No. 7

By: JAS. C. GARDNER, M.D.

"WHEREAS, the reports of some Association officers and committee chairmen, state that additional personnel in the headquarters office is necessary to carry on the expanded work, and

"WHEREAS, the Tennessee State Medical Association has grown considerably in number of members and extended its operations and services during the last five years, and

"WHEREAS, an increasing amount of work is assumed each year by the Tennessee State Medical Association, creating many additional services required of the headquarters office personnel, and

"WHEREAS, if additional personnel is required to conduct the business of this As-

sociation, the determination for financing will have to be approved by this House of Delegates.

"THEREFORE BE IT RESOLVED, that the House of Delegates instruct the Board of Trustees to study and re-evaluate the work conducted through and by the headquarters office staff, to determine to what extent additional personnel is required.

"BE IT FURTHER RESOLVED, that the Board of Trustees submit a recommendation on this matter to the House of Delegates at a special or regular session."

The Reference Committee recommended the adoption of this Resolution. The motion was duly seconded, the question was called for and the motion was put to a vote and carried and **the Resolution was adopted.**

The Speaker asked the Chairman of the Reference Committee if he wished to move the adoption of his report as a whole. Dr. Hamilton stated that they had Resolution No. 8 yet to consider and requested that he be allowed to report on that Resolution before moving the adoption of the report as a whole.

The Speaker announced that the House then would consider the report of the Reference Committee on Reports of Officers.

Report of the Reference Committee on Reports of Officers

WILLIAM J. SHERIDAN, M.D., Chairman

The Chairman of the Reference Committee asked the Speaker of the House whether or not the Reports for the Officers should be voted on individually or as a whole. The Speaker stated that he saw no reason why the reports could not be voted upon as a whole.

Dr. Sheridan read the following report of the Reference Committee on Reports of Officers.

Report of the President

"The Committee on Reports of Officers has reviewed the report of Dr. R. B. Wood, President, and wishes to commend him highly for the manner in which he has carried out the duties of his office for the past year. We endorse his suggestions: that efforts be made to maintain the integrity and underlying objectives of our organization; that

financial aid be continued to our medical schools; and that efforts be continued to maintain friendly patient-doctor relationships."

Report of the Chairman of the Board of Trustees and Treasurer

"Your Committee has reviewed the reports of Dr. James C. Gardner, Chairman of the Board of Trustees and Treasurer. We doubt if the average member of our organization has any concept of the magnitude of the duties of the Board of Trustees and no commendation of ours can adequately express our gratitude for their adequate management of the affairs of this Association. "In regards to the financial management, it suffices to reiterate the statement of the Treasurer that 'We are not in the red.'

"In regard to the supplemental report of the Board of Trustees recommending the acceptance of federal monetary aid to our Indigent Hospital Care program, this Committee is in accord with the recommendations that final action be proper business for this House of Delegates."

Report of Secretary-Editor

"Your Committee on reports of officers has reviewed the report of Dr. R. H. Kampmeier, Secretary-Editor and wishes to thank him for the splendid work in producing a very fine JOURNAL. We are in accord that the high level of the JOURNAL should be maintained even if financial assistance from the general funds of the Society be necessary. This expression of appreciation is also extended to the associate editors, Drs. Scoville and Weinstein."

Report of the Council

"Your Committee has reviewed the report of Dr. D. C. Seward, Chairman of the Council, and wishes to commend him and the Councilors for their good work during the past year. Cognizance is taken of the timely advice concerning the responsibilities of doctors to their patients."

Report of Executive Secretary

"Your Committee has reviewed the report of Mr. J. E. Ballentine, Executive Secretary, and wishes to express to him its thanks for his tireless efforts during the past year. We

realize that each year the responsibility of this office increases. His recommendations for broadening the scope of activities of the Association appear to be timely."

At the conclusion of the Reference Committee report, the Chairman moved the adoption of the report as a whole. The Speaker requested the House to make its action in two parts. First to accept the report as read and then to accept the report of the reference committee as a whole.

The Chairman of the Reference Committee moved that the reports be accepted as read. The motion was seconded and there being no discussion, was put to a vote and **the motion to accept the reports as read was adopted.**

The Chairman then moved that the report of the Reference Committee on Reports of Officers be accepted as a whole. The motion was duly seconded, put to a vote and **the report of the Reference Committee on Reports of Officers was adopted as a whole.**

The Speaker then called upon the Chairman of the Reference Committee on Reports of Committees.

**Report of Reference Committee on
Reports of Committees**

ERNEST G. KELLY, M.D., Chairman

Dr. Kelly stated that all members of the House had heard the reports presented. He stated that 13 committees had not reported.

He stated that the first seven reports—Scientific Work Committee, the Legislative and Public Policy Committee, the Insurance Committee, the Memoirs Committee, the Postgraduate Education Committee, the Cancer Committee and the Grievance Committee were all approved by the Reference Committee and recommended for adoption. The Chairman so moved. The motion was duly seconded.

The question was called for, the motion was put to a vote and carried and **the seven reports listed above were adopted.**

The Chairman of the Reference Committee stated that next would be the report of the Prepaid Insurance Committee which also included Medicare recommendations. He stated that the Insurance Committee had left it to the House of Delegates as to whether or not the House wanted to estab-

lish an assistant's fee in the Medicare Schedule.

The Reference Committee recommended that the House make this decision.

Dr. A. Fount Russell, Clarksville, spoke concerning the Medicare and Tennessee Plan assistant's fee and pointed out that many hospitals do not have a house staff. He stated that an assistant's fee was needed. Dr. Russell moved that the House include the assistant's fee to amount to approximately 20% of the total surgical fee. Upon being informed by the Speaker that this could not be set, Dr. Russell rescinded his motion and made another motion that the Committee consider an assistant's fee. He further moved that the House of Delegates consider adding an assistant's fee to the Medicare schedule.

Dr. Russell's motion for an assistant's fee was duly seconded. Dr. James C. Gardner of Nashville, took the floor to speak on the assistant's fee schedule. He related much of the details of the contract made with the Federal Government on the Medicare schedule in November, 1956.

Dr. Carroll Long, Johnson City spoke on the motion.

Dr. Wm. J. Sheridan, Chattanooga, spoke relative to the motion and requested further clarification.

Dr. Henry Kirby-Smith, Sewanee, spoke on the matter, however he stated "that when one starts putting in this type of fee that you start a wedge of fee-splitting." Dr. Kirby-Smith stated that "all of us do surgery now without necessarily having an assistant's fee and I think we can keep on doing it."

Dr. James A. Kirtley, Nashville, Chairman of the Prepaid Insurance Committee, spoke relative to this matter and particularly on the Medicare fee schedule. He gave specific examples of problems involved with an assistant's fee. He pointed out that an assistant's fee would greatly increase the cost of Medicare, thus indirectly costing the tax-payers more money since the Medicare plan was a reimbursement plan and not insurance.

The Speaker called for a vote on Dr. Russell's motion stating the motion as one

to include an assistant's fee in the "Medicare" plan.

The motion was put to a vote and defeated 36 to 22.

The Chairman of the Reference Committee then commented upon the second part of the report on the Tennessee Plan, requiring the insurance carriers to include a statement of income of the policyholder on the claim form. The Reference Committee doubted the wisdom of a statement of income and the Chairman moved that the provision requiring carriers to include a statement of income on the form be deleted from the report. The motion was severally seconded. The question was called for, **the motion was put to a vote and carried and the motion that the provision requiring carriers to include a statement of income on the claim form be deleted from the report.**

The Chairman stated that with those deletions and corrections in the report, the Reference Committee recommended the report of the Prepaid Insurance Committee for acceptance and further recommended that the committee be commended for the tremendous amount of work that it had accomplished.

The Chairman of the Reference Committee then recommended that the Public Service Committee report be accepted; that the Rural Health Committee report be accepted and that the three recommendations of this committee concerning personnel and finances be referred to the Board of Trustees for disposition.

Special Reports

Industrial Health Committee — recommended for acceptance.

Liaison Committee to the UMWA—recommended for acceptance.

Veterans Affairs Committee—recommended for acceptance.

Tuberculosis Committee — recommended for acceptance.

Mental Health Committee—recommended for acceptance with the recommendation that the suggestions of the Committee be referred to the Board of Trustees.

Liaison Committee to the State Bar Association—recommended for acceptance and that the committee be commended and the

recommendations as proposed by the committee be referred to the Board of Trustees.

Health Project Contest Committee—recommended for acceptance.

Headquarters Building Furnishings and Appointments Committee — recommended for acceptance.

Study Committee on Legal Definition of Medicine and Medical Practice—recommended for acceptance.

Committee on American Medical Education Foundation—recommended for acceptance.

Report of the President of Woman's Auxiliary—recommended for acceptance.

Report of Chairman of AMA Delegation—recommended for acceptance.

Dr. Wm. A. Garrott, Cleveland, asked whether or not the acceptance of the report of the Prepaid Insurance Committee included the acceptance of the proposed fee schedule.

The Chairman of the Reference Committee reported in the affirmative.

Dr. Garrott asked if that included the \$10.00 deductible.

The Reference Committee Chairman stated that there were two plans and one of them was the \$10.00 deductible. Dr. Garrott asked that if the House accepted the Committee's report, did it include all recommendations.

The Speaker stated that since the House had passed the discussion of the Insurance Committee, that this matter should be clarified.

Relative to the fee schedule, the Reference Committee Chairman stated that it was recommended the fee schedule, as proposed by the Prepaid Insurance Committee, be approved. The Speaker announced that the House should now discuss the matter.

Dr. James A. Kirtley, Chairman of the Prepaid Insurance Committee discussed the recommendation of the Committee. Dr. Garrott again commented upon the schedule and stated that although the premium rate was increased, doctors are compensated less even with the new fee schedule. Dr. Garrott discussed in some detail the proposed fee schedule.

Following this discussion, the Speaker of the House instructed the Executive Secre-

tary to read the recommendations of the Prepaid Insurance Committee as contained in the report of the Committee. The recommendations were read. It was recommended that the report of the Insurance Committee be considered by each paragraph in which was made a recommendation.

Recommendations of the Prepaid Insurance Committee:

1. That the proposed Plan A be recommended to the House of Delegates to replace the present Tennessee Plan. Plan A would be recommended for sale without any deductible, to those buyers who wished to purchase the plan at the increased premium. Those purchasers who did not, would be allowed to purchase the plan with a \$10.00 deductible across the board. It was agreed that the Committee would take every step possible to work with representatives of all specialties in order to get the schedule acceptable and to encourage participation by all physicians where it was possible to do so.

The Chairman of the Reference Committee moved the adoption of this recommendation. The motion was seconded.

This recommendation was discussed by Dr. Sheridan of Chattanooga and Dr. A. Fount Russell, Clarksville.

The Speaker announced that the House was voting on the motion to adopt recommendation No. 1 of the Report of the Prepaid Insurance Committee.

Dr. Garrott of Cleveland moved that the recommendation be tabled. The motion was seconded. Upon motion duly made and seconded, and carried, **the motion was tabled.**

Following this action, Dr. Kirtley, Nashville, spoke relative to the recommendation. His discussion related mostly to the California Unit Value Plan by which the Medicare plan in Tennessee was modeled. Following this, Dr. Kirtley spoke on the \$10.00 deductible plan proposed for the Tennessee Plan and furnished further information relative to the Committee's recommendations.

The next recommendation of the report was No. 2 and the Reference Committee Chairman moved its adoption. This recommendation was as follows:

2. That after due study by the committee and recommendations of the underwriters, it was found impractical to include Plan B in the Tennessee Plan. The Prepaid Insurance Committee voted not to recommend the Plan B schedule.

The Reference Committee moved that the recommendation not be considered. The motion was duly seconded.

Dr. Duane Carr of Memphis requested that the House be refreshed on the essence of Plan B. This was done by Dr. Kirtley.

The motion not to consider was put to a vote and **recommendation No. 2 of the Prepaid Insurance Committee report was adopted as recommended by the Reference Committee.**

No. 3. Concerning the proposed In-Hospital Medical Rider as originally presented by the Executive Sub-Committee, the Prepaid Insurance Committee stated that they had no actuarial experience to guide them for determining this type of rider and therefore the In-Hospital Medical Plan was not recommended.

The Reference Committee moved the adoption of this recommendation. The Recommendation was discussed by Dr. Carroll Long of Johnson City. The recommendation of the Reference Committee was not to accept Item 3 and Dr. Long amended the recommendation wherein the Insurance Committee be asked to continue to study the In-Hospital Medical fee schedule for the Tennessee Plan. The motion was seconded.

Dr. Kirtley discussed this matter.

Following the discussion, the Speaker stated that the motion under discussion was the amendment. The amendment is to specify that the Prepaid Insurance Committee shall continue to study In-Hospital Medical Care.

The question was called for, the amendment was put to a vote and carried, and **the amendment was adopted.**

Upon motion duly made and seconded, the recommendation of the Prepaid Insurance Committee as amended for paragraph three, **was adopted.**

Recommendation No. 4: The radiological benefits for treatment of malignant diseases was recommended for inclusion as an optional benefit in the Tennessee Plan.

5. Concerning multiple coverage of insurance policies, the Committee directed the Chairman to report to the House of Delegates that it had sought legal counsel and found it not advisable to take action at this time relative to multiple coverage in insurance policies. The insurance contracts would have to be revised, therefore it was believed by the Committee that this would not be advisable at this time, and it was the Committee's further opinion that such would be detrimental to medical public relations.

The Chairman of the Reference Committee moved the adoption of this recommendation.

Dr. Garrott, Cleveland, discussed the question of multiple policies.

The Speaker of the House requested Mr. Chas. Cornelius, attorney for TSMA, to discuss this matter. Mr. Cornelius spoke on multiple policies.

Dr. C. M. Hamilton, Nashville, further discussed this question. He disagreed that the patient makes money on insurance.

The Speaker re-stated the motion, the motion was duly seconded, **was put to a vote and adopted.**

Dr. C. B. Roberts, Sparta, moved that the Prepaid Insurance Committee be instructed not to consider any deductible insurance plan or programs to be participated in by the members of the Tennessee State Medical Association. The motion was duly seconded.

Dr. Carroll Long, Johnson City, spoke on the question. Dr. Long amended the motion of Dr. Roberts in that the Prepaid Insurance Committee be requested to continue in its study looking toward bringing a new plan to this Association in either a regular or called meeting, and embodying the sense which has developed during this discussion. The amendment was duly seconded. The question was called for, and **the amendment was put to a vote and carried.**

The Speaker announced that the House should now act upon Dr. Robert's original motion. **The motion was put to a vote and carried as amended.**

At this point, the Speaker asked that the Report of the Insurance Committee as amended be adopted. It was so moved by

the Reference Committee Chairman and severally seconded. There being no further discussion, **the Report of the Prepaid Insurance Committee as amended was put to a vote and adopted.**

The Chairman of the Reference Committee on Reports of Committees then moved to adopt the report of the Reference Committee as a whole, as amended. The motion was severally seconded and put to a vote and carried, and **the Report of the Reference Committee on Reports of Committees was adopted as a whole, as amended.**

Report of the Nominating Committee on Election of Officers

J. THOMAS BRYAN, M.D., Chairman,
Nashville

The Speaker called for the report of the Nominating Committee and stated the House would proceed with the election of officers. The Chairman of the Nominating Committee submitted the following report.

The Nominating Committee placed the names of Dr. James C. Gardner of Nashville, Dr. Wm. N. Cook of Columbia and Dr. A. Fount Russell of Clarksville in nomination for the office of President-Elect.

Upon motion duly made and seconded, the nominations were closed and the House ensued with the balloting. During the counting of the ballots, the nominations continued.

The Nominating Committee placed the name of Dr. Robert N. Buchanan, Jr. of Nashville for the office of Speaker of the House. There being no further nominations, Dr. Buchanan was unanimously elected.

The Nominating Committee placed the name of Dr. Joseph W. Johnson, Jr. of Chattanooga for the office of Vice-Speaker of the House. There being no further nominations, Dr. Johnson was declared unanimously elected Vice-Speaker of the House of Delegates.

The Nominating Committee presented the name of Dr. R. H. Kampmeier of Nashville for Secretary-Editor. There being no further nominations, Dr. Kampmeier was declared elected Secretary-Editor.

The Nominating Committee placed the

names of Dr. O. Reed Hill of Lebanon and Dr. Henry T. Kirby-Smith of Sewanee for Trustee from Middle Tennessee.

The Speaker announced that under the new Constitution there was one Trustee to be elected from Middle Tennessee. A committee was appointed to act as tellers to collect the ballots.

The Nominating Committee named Dr. Ralph O. Rychener, Memphis; Dr. M. A. Blanton, Union City and Dr. Julian K. Welch of Brownsville for Trustees to fill two places from West Tennessee.

The Speaker announced that the President-Elect for 1958 was Dr. James C. Gardner of Nashville.

The Speaker appointed a Committee to escort the President-Elect and present him before the Scientific meeting.

The Nominating Committee placed the names of Dr. Dan Thomas of Knoxville and Dr. Wm. A. Garrott of Cleveland for Trustee from East Tennessee—one to be elected.

The Nominating Committee named Dr. Byron O. Garner, Union City, for the office of Vice-President from West Tennessee. There being no other nominations, Dr. Garner was declared unanimously elected Vice-President from West Tennessee.

The Nominating Committee named Dr. Thurman Shipley of Cookeville for the office of Vice-President from Middle Tennessee. There being no other nominations, Dr. Shipley was unanimously elected Vice-President from Middle Tennessee.

The Nominating Committee selected Dr. Moore J. Smith of Chattanooga for the office of Vice-President from East Tennessee. There being no further nominations Dr. Smith was declared unanimously elected Vice-President from East Tennessee.

The Nominating Committee presented the name of Dr. C. M. Hamilton of Nashville and Dr. W. C. Chaney of Memphis as delegates to the American Medical Association. There being no further nominations, Dr. Hamilton and Dr. Chaney were unanimously elected delegates to the AMA.

The Nominating Committee named Dr. Harold B. Boyd, Memphis, and Dr. R. H. Kampmeier, Nashville, as alternate delegates to the American Medical Association. There being no other nominations, Dr. Boyd

and Dr. Kampmeier were unanimously elected as alternate delegates to AMA.

The Nominating Committee was pleased to present nominees for the Public Health Council, three each from East, West and Middle Tennessee, three of whom will be subsequently appointed by the Governor to the Public Health Council.

Physicians nominated were: Dr. Marsh Frere, Chattanooga; Dr. R. C. Kimbrough, Madisonville; Dr. O. W. Hill, Knoxville; Dr. R. N. Buchanan, Jr., Nashville; Dr. J. B. Black, Murfreesboro; Dr. J. Paul Lindsay, Nashville; Dr. Ben L. Pentecost, Memphis; Dr. J. Kelly Avery, Union City; Dr. Wm. B. Acree, Ridgley.

The Speaker called for additional nominations from the floor. There being none, the above nine physicians were declared nominated for possible appointment by the Governor to the Public Health Council.

The Nominating Committee selected three physicians for the Board of Trustees of State Tuberculosis Hospitals from East Tennessee, one of whom will be appointed by the Governor. The nominees were: Dr. Robert W. Newman from Knoxville, Dr. James E. Johnson of Chattanooga and Dr. Carroll Long of Johnson City.

Dr. R. H. Hutcheson requested permission to make a point of order. He stated that Dr. Johnson from Chattanooga would not be eligible for this particular appointment under the Law since there were two TB hospitals in East Tennessee. He suggested that a substitute be named for Dr. Johnson. The Committee withdrew the name of Dr. Johnson and Dr. Wm. J. Sheridan of Chattanooga placed in nomination the name of Dr. Joe Raulston of Knoxville. The motion was made, duly seconded and carried that the nominations be closed and the nominees be elected.

The Chairman of the Nominating Committee stated that inasmuch as Dr. James C. Gardner had been named President-Elect, that a vacancy will occur on the Board of Trustees from Middle Tennessee. The Nominating Committee presented the name of Dr. Chas. C. Trabue, IV, of Nashville to fill Dr. Gardner's unexpired term.

It was moved, duly seconded and carried

that nominations be closed and that Dr. Trabue be declared elected by acclamation.

Dr. Carroll H. Long requested that the results of the election for trustee from Middle Tennessee should be known since it possibly involved a member of the Council.

The Speaker announced that Dr. Dan Thomas of Knoxville had been elected a Trustee from East Tennessee.

The Speaker announced that the House would hear the unfinished report from the Reference Committee on Resolutions.

Resolution on Cycloplegic Medicine No. 8

By RALPH O. RYCHENER, M.D., Memphis

"WHEREAS, an editorial in the February 1957 issue of the Maine Medical Journal calls attention to the fact that certain M.D.'s have used cycloplegic medicine on occasions at the request for optometrists, and

"WHEREAS, there are many dangers attached to such indiscriminate procedures, and

"WHEREAS, since the Medical-Legal aspect involves the M.D. only,

"NOW THEREFORE BE IT RESOLVED, that a copy of this Maine Medical Journal Editorial be spread on the minutes of the TSMA and printed in the TSMA JOURNAL."

The Reference Committee recommended the adoption of this Resolution, and that the editorial as requested in the Resolution be published in the JOURNAL and filed in the minutes of the Association.

The question was called for, the motion was put to a vote and carried, and **the Resolution was adopted.** (See page 224.)

At the completion of the Reference Committee on Resolutions report, a motion was made, duly seconded and carried that the Report of the **Reference Committee on Resolutions be adopted as a whole.**

It was reported by the Speaker that Dr. Henry T. Kirby-Smith had been elected Trustee from Middle Tennessee, therefore creating a vacancy on the Council.

The Nominating Committee presented the name of Dr. Ben H. Marshall of Fayetteville for the office of Councilor to fill the unexpired term of Dr. Kirby-Smith. It was moved and seconded that nominations be closed and Dr. Marshall be elected by acclamation. The motion was severally seconded,

put to a vote and carried and **Dr. Marshall was unanimously elected.**

The Speaker announced that the voting on the Trustee from West Tennessee had been close and that Roberts Rules of Order was being perused as to determination of the election. He questioned whether or not the House wished to follow the plurality voting method since one Trustee from West Tennessee had received 49 votes, the second 43 votes and the third 42 votes. The method of a plurality was explained by the Speaker.

Upon motion duly made and seconded, it was moved that acceptance of a plurality be followed. After discussion, the Speaker announced that the motion before the House was whether or not to accept the plurality.

The question was called for, the motion was put to a vote and carried and the House voted to follow a plurality. The Speaker announced that Dr. Ralph O. Rychener of Memphis and Dr. Julian K. Welch of Brownsville had been elected Trustees from West Tennessee.

Meeting for 1958

The next order of business was the selection of a place of meeting for next year. Dr. O. W. Hill, Knoxville, invited the Association to come to Gatlinburg for its annual meeting in 1958.

The Speaker called upon the Executive Secretary for information relative to the Gatlinburg location and he pointed out that the annual meeting dates for 1958 come on Easter Sunday weekend. The facilities at Gatlinburg were also discussed. Discussion followed on when the meeting should be conducted.

It had been suggested that the meeting be conducted on the weekend beginning March 31st, and **this motion was put to a vote and defeated.**

A motion was made that the meeting be conducted in Gatlinburg in 1958 and the dates for the meeting be established by the Board of Trustees. **This motion was duly seconded and adopted.**

The Speaker called for any additional old or new business and there being none, moved to the next order of business.

Dr. Everett, Memphis, made a motion that the Nashville Academy of Medicine and the

Arrangements Committee be thanked for their gracious hospitality during the meeting in Nashville. **The motion was duly seconded and adopted.**

There being no further announcements or

business, the House of Delegates of the Tennessee State Medical Association was adjourned at 1:15 p.m., sine die.

J. E. BALLENTINE

Executive Secretary

MINUTES OF THE MEETINGS OF THE COUNCIL

April 7, 1957

The Council of the Tennessee State Medical Association conducted two meetings, one a called session and the other a regular meeting during the annual meeting of the Tennessee State Medical Association conducted in Nashville.

The first was a special called meeting conducted on Sunday, April 7 in the Maxwell House at Nashville.

In addition to the members of the Council present were: Dr. R. B. Wood, President of TSMA; Dr. J. Paul Baird, President-Elect; Dr. Robert N. Buchanan, Jr., Speaker of the House; Dr. James C. Gardner, Chairman of the Board of Trustees and Mr. Charles L. Cornelius, Sr., Legal Counsel for the Association.

The purpose of the called meeting was to discuss action to be taken against a physician in the First Councilor District. This matter was presented to the Council by Dr. Carroll Long of Johnson City, Councilor for the First District. The Council heard the discussion and was advised that the physician involved had submitted his resignation to the Tennessee State Medical Association and since no actual charges had been preferred, the Council dismissed the complaint and directed that the resigned physician's dues be returned to the County Medical Society of which he formerly was a member.

Regular Annual Meeting

April 8, 1957

The Council of the Tennessee State Medical Association convened in regular session at the Maxwell House at 9:30 a.m. on April 8, 1957. Councilors present were:

Dr. D. C. Seward
Dr. Carroll H. Long
Dr. Duane Carr
Dr. W. E. Anderson
Dr. Henry T. Kirby-Smith
Dr. John T. Moore, Jr.

The meeting was called to order by the Chairman, Dr. D. C. Seward, and the first business of the Council was to organize for

the year 1957. Dr. D. C. Seward was nominated for the chairmanship and there being no further nominations, he was declared elected.

Dr. Cecil Newell was nominated and elected to be Secretary. Inasmuch as Dr. Newell was not present for the meeting, Dr. John T. Moore, Jr., of Algood substituted as acting secretary during the regular meeting.

Old Business:

Dr. Carroll H. Long proposed a work group to be made up of three councilors to better define the councilor's duties as related to individual members of local societies, with the goal to be an amendment to the By-Laws of the Tennessee State Medical Association clarifying this matter. The committee was composed of Dr. Duane Carr of Memphis, Dr. Carroll Long of Johnson City and Dr. John T. Moore, Jr. of Algood.

A discussion of the duties of the Councilor followed.

The Council also discussed the matter of reinstatement of members of the Association after serving prison terms, parolees or suspended sentences. The Council decided to advise local societies to reinstate on probation for a period of time suitable to local societies, any member who had been in violation of law laws.

The Council then discussed a Resolution introduced in the House of Delegates on April 7 by Dr. Chas. C. Trabue, which urged that all county medical societies make their Constitution and By-Laws or other governing regulations contain the requirements of the state medical association as related to membership, in order that members of the county medical societies would also be active members of the Tennessee State Medical Association.

Every member of the Council had an opportunity to present any problems in his councilor district. There being nothing further to report, the Council adjourned.

JOHN T. MOORE, JR., M.D.

Acting Secretary

Abstract of Reports of Officers and Committees Read Before the House of Delegates of the Tennessee State Medical Association, April 7, 1957 Maxwell House—Nashville

Report of the President

R. B. Wood, M.D.

The President, Dr. R. B. Wood of Knoxville, reported to the House of Delegates on his activities during the year he had served as President. He pointed out that the position was demanding of time and sacrifice. He lauded the Board of Trustees for the difficult portion of the administrative work and pointed out that the President was fortunate to have the guidance and advice of the Board in conducting his term as President of the Tennessee State Medical Association.

He reported upon the many meetings that he had attended at county medical societies throughout the state as well as regional and national meetings of major importance during the year. He reported upon the Medicare program, stating that it demanded much time from the executive secretary, the headquarters office staff, the Prepaid Insurance Committee and members of the Board of Trustees. It was recommended that a study be made of the work-load of the headquarters office staff.

Dr. Wood pointed out that one of his major objectives was to formulate a representative committee from each Councilor District to further the cause of the American Medical Education Foundation. His second objective was to obtain cooperation on a statewide basis for inoculation against poliomyelitis. He urged that specialty societies coordinate their activities and to continue to conduct their meetings in conjunction with the annual state meeting. He stated that the framework of the whole Association was built by general practitioners and the program is still largely directed at this group, and stated that the stability of the Association depended upon the continued cooperation of all groups.

He stated the family physician is still the most important factor of good public relations.

Gratitude and commendation was expressed to the officers, committees, committee chairmen and others who had carried the load in conducting the heavy responsibilities of the Association during 1956.

Report of the Secretary-Editor

R. H. KAMPMEIER, M.D.

The Editor reported upon the difficulty in keeping the JOURNAL of the Tennessee State Medical Association equal to Journals of other state medical associations. This is difficult because of inflationary costs of publication. He pointed out the income in advertising and related the number of pages of reading material as compared with

advertising pages from the year 1951 through 1956. The report stated that it may be necessary for certain funds from the dues to be allocated to the JOURNAL in order to make it in keeping with other state journals. The report pointed out that the acceptable ratio of 65 to 35, as between the scientific and non-scientific copy was being maintained. The report acknowledged the able assistance of the assistant editors, Doctors Addison B. Scoville and Albert Weinstein.

Report of the Board of Trustees

JAMES C. GARDNER, M.D., Chairman and Treasurer

The report stated that the Board of Trustees held two regular meetings during 1956, one immediately following the annual session of the House of Delegates in Memphis, and the semi-annual session conducted in Nashville in October.

Many long distance telephone conferences among members of the Board and mail ballots were taken on policy matters.

Dr. Gardner reported in detail relative to participation in the Medicare program for dependents of military personnel, pointing out that he was delegated along with the executive secretary and the legal counsel or counselor for the TSMA, to negotiate the Medicare contract with the Department of Defense in Washington in November, 1956.

Policy decisions were discussed with other members of the Board by correspondence or long distance telephone conversations. All mail ballots were officially confirmed at regular meetings of the Board of Trustees and entered in the official records. The report further dealt with all business actions that were presented and consummated by the Board of Trustees during the year. These included clearing all financial records, audits, statements and appointments of the standing and special committees, plus the committees established by the House of Delegates and referred to the Board of Trustees for appointment.

The report stated that the Board approved the statewide County Society Officers Conference successfully conducted in Nashville in September, 1956. The report pointed out the manner in which the special committee to review the legal definition of medicine and medical practice was formulated.

The Board of Trustees carried out instructions of the House of Delegates to establish an organization to administer the doctors' Memorial Trust Fund. A legal document was drawn and the Board appointed three Trustees to administer the funds.

In addition to being the interim policy making body, the Board is also responsible for the budget

and all finances of the Association, together with the policy and conduct of the JOURNAL. The report dealt with the Board's determination of what constituted membership in the State Medical Association. The report referred to Section 2, Article IV of the Constitution wherein it is stated that active members of county societies will be the active members of the Tennessee State Medical Association.

The Board reported that it had approved the Interprofessional Code of Cooperation between lawyers and doctors as submitted by the Legal Liaison Committee to the Tennessee Bar Association. The report stated that a 15% rate increase for advertising in the JOURNAL was approved and made effective January 1, 1957.

The Chairman pointed out that it was his duty to bring to the House of Delegates the fact that the increasing work-load and demands upon the personnel in the headquarters office are to the point where consideration must be given to the problem. He stated that if additional personnel was necessary, financing would have to be provided by the House of Delegates.

Treasurer's Report

The second part of the Chairman's report dealt with the Treasurer's report. Dr. Gardner stated that the financial audit covered the details of the fiscal operations of the association completely, and since it was long and detailed, he would not try to discuss it, but any member desiring could examine the report. Quarterly financial statements were studied carefully by the Board.

The budget for 1957 was approved by the Board in its October meeting and the budget for 1957 is \$92,850.00. It was pointed out that approximately 70% of the budget goes for the administrative and organizational activities of the Association, the JOURNAL and thirty-six committees. Approximately 30% of the budget is now being spent in the operation of the Public Service Program.

The report pointed out the increasing cost of printing and production of the JOURNAL, stating that the State JOURNAL has increased more than 40% in cost in the last five years. This was due to increased costs of paper, labor, mailing requirements and an increase in the number of pages contained in the JOURNAL.

Dr. Gardner stated that one of the major accomplishments during the year was the ability of the Board to pay off one of the principle loans made on the headquarters office building. He stated that the only encumbrance upon the headquarters building at present was a long-term loan with the National Life & Accident Insurance Company, amortized over 20 years with interest rate at 4¼%. The Chairman and Treasurer pointed out that although fiscal management was a difficult problem, the Association was not in the red.

Report of the Council

D. C. SEWARD, M.D., Chairman

Dr. Seward's report pointed out that the Councilors were active during the past year. He singled out Dr. Cecil Newell, Councilor for the Third District, for the thoroughness in which he had gone into his District report. Dr. Seward stated that one of the Districts seemed to be having considerable trouble, necessitating a called meeting of the Council. Other Districts were reported to be in good condition. The Chairman of the Council stated that no serious unethical or unprofessional conduct other than one mentioned in the First District had been reported. Dr. Seward reported on several threatened malpractice suits and the Council recommended settlement on several of these cases without admitting liability.

Dr. Seward's report also reviewed in some detail an article in a recent issue of the AMA JOURNAL concerning negligence in relation to doctors. The report further reminded doctors of the liability that they have for those who work for them, namely graduate nurses, technicians or orderlies, etc. The report further stated that articles bearing on malpractice suits show that the places where the fewest malpractice suits come from are where there are the largest number of so-called "family" doctors. The report stated that this emphasizes the doctor-patient relationship that must be maintained. The report concluded by enumerating the following causes of professional liability claims: (1) Poor results following orthopedic surgery. (2) X-ray burns. (3) Foreign bodies left in tissue. (4) Failure to obtain consent for surgery. (5) Inaccurate medication or improper diagnosis. (6) Criticism of one physician by another. (7) Excessive fees. (8) Poor patient-physician relationships.

Report of the Executive Secretary

J. E. BALLENTINE

The Executive Secretary's report revealed the amount of work conducted during the year in the headquarters office. The report pointed out that the most far-reaching development during the year was the action of Congress in passing Public Law 569 to provide medical care for dependents of military personnel. The report stated that all doctors in the state had been furnished with complete information as well as procedure manuals and fee schedules on the Medicare program. The report stated that legislation is becoming a more important aspect of medical organization each year. This was true on the national and state level. The executive secretary reported upon the amount of time and the projects covered during the recent session of the Tennessee General Assembly, pointing out the importance of performing organizational work to pass the legislative program of this Association as well as to oppose that legislation deemed detrimental to organized medicine and to the public.

The report revealed the status of various types of membership in the Association as of January 1, 1957. The total membership of the Association is 2,526 members of all types with 2,224 members belonging to the American Medical Association. It was reported that 47 physicians died during 1956.

The report stated that considerable time was spent monthly in the publishing of the JOURNAL and handling of advertising.

The Executive Secretary's report detailed the specific projects during the year which were as follows: (1) Legislative work in the state and particularly on the controversial national congressional Bill HR7225 which had to do with the expansion of Social Security. (2) Expanded features built into the annual meeting. (3) Additional committees and conducting the work of the committees of the Association. (4) An expanded and stepped up postgraduate education program. (5) The amount of work performed in remodeling the Constitution and By-Laws. (6) Establishing and putting into effect a liability and malpractice insurance program. (7) Work performed with the Liaison Committee to the Bar Association in establishing and adopting the Inter-professional Code of Cooperation, between lawyers and doctors. (8) Conducting the first County Medical Society Officers Conference during the year 1956 which covered such subjects as society membership and its administration, ethics, public service, and the relationship of the physician to the American Medical Association. It was reported that more than 100 county society officers were in attendance. (9) Special meeting of the House of Delegates relative to the policy and fee schedule on Dependents Medical Care Act. (10) The ever-increasing administrative work in conducting the business of the Tennessee Plan. It was reported that 1,200,000 Tennesseans are now covered under the Tennessee Plan and expansion is continuing.

Other activities of the Executive Secretary reported were: AMA and TSMA membership problems, correspondence, JOURNAL advertising, field travel and conducting the affairs of the Tennessee State Medical Association as related to the American Medical Association. The Executive Secretary reported upon the financial management of the Association stating that many of the fiscal operations are administered by him. Assistance to county medical societies on adopting a constitution and by-laws was another project of the Executive Secretary and he reported upon the number of societies assisted in this work during the past year.

The report concluded by recommending that the Association more thoroughly evaluate its responsibilities in all fields affecting medicine, particularly in legislation, public service, insurance and every activity related to health. Recommendation also was made that the Association study the work load of the headquarters staff. County societies were urged to improve their liaison with the headquarters office by rendering more prompt reports

of elections and other society activities. Members of the headquarters office staff were commended for their loyalty and devotion to duty during the past year. Appreciation was expressed to the officers, the Board of Trustees, members of the House of Delegates, committee members and chairmen, officers and members of all county medical societies for their cooperation during the year.

Supplemental Report of Board of Trustees

JAS. C. GARDNER, M.D., Chairman

This report dealt primarily with a called meeting of the Board of Trustees in January 1957 to determine the policy of the Tennessee State Medical Association concerning the use of federal funds to augment the indigent hospital program in Tennessee.

Members of the Board of Trustees met jointly with the officers, members of the public service committee, the commissioner of health and other representatives of the State Health Department. The discussions dealt with the use of federal funds to supplement the appropriation of the State of Tennessee in order to obtain a proper and workable appropriation for the Indigent Hospital Program in Tennessee. The report stated that the Board of Trustees recommended the use of federal funds in this program and directed the President to so notify the Governor to this effect. The Chairman pointed out that although the Board of Trustees took this action, it should be ratified by this House of Delegates.

Report of the Committee on Scientific Work

R. H. KAMPMEIER, M.D., Chairman

Except for several contributed papers, the scientific program had been arranged through topics proposed by members of the committee and essayists selected to cover the subjects. The report stated the committee's opinion was that this was the best means of providing a program of educational value. The Chairman acknowledged the aid and cooperation of all members of the Committee on Scientific Work.

Report of the Committee on Public Policy and Legislation

W. W. WILKERSON, JR., M.D., Chairman

The report pointed out that the Tennessee State Medical Association had been successful in attaining its objectives in the 80th General Assembly of Tennessee. The Chairman expressed his thanks for the help of the attorney for TSMA, Mr. Charles L. Cornelius; the attorney for the healing arts board, the State Commissioner of Public Health, administration leaders and particularly the governor.

The report reviewed the activities of the Legislative Committee which were as follows: (1) The committee refused to approve a Bill suggested by the optometrists which would have prevented optometry from being practiced in department and jewelry stores. (2) Disapproved a bill by the

chiroprodists which would have allowed them to use narcotics. These bills were not introduced by the respective groups due to the action of the Legislative Committee. (3) Supported Bills for a bond issue of \$500,000 for the West Tennessee State Tuberculosis Hospital at Memphis, and a \$500,000 bond issue for Hearing and Speech Buildings at Johnson City, Knoxville, and Jackson.

The following bills had the active support of the Legislative Committee: (1) The Indigent Care Program appropriation. (2) The passage of a model fireworks law. (3) The Committee approved legislation to establish a medical examining system in the place of the present coroner system, but left initiation of this to the Tennessee Bar Association. A local bill was passed for Davidson County to this effect and it had the support of the Legislative Committee. (4) Supported a resolution which was passed authorizing the Legislative Council to study the relationship of Psychiatry and Psychology. (5) Introduced a bill defining Audiology, however, it was found that lack of agreement existed on the part of the audiologists and this bill was withdrawn. (6) Supported the Tennessee State Dental Association in passing a bill to regulate the practice of dentistry.

The Legislative Committee opposed all bills which were felt to be medically detrimental to the public interest. The report pointed out the program of the American Medical Association in establishing a key legislative man in every society to assist the AMA with national legislation occurring in Washington. The program of appointment is being carried out under the direction of the Legislative Committee.

The report of the Committee recommended the following: (1) A clearer definition of the duties and responsibilities of the Committee. (2) A statement as to the amount and use of funds available to the Legislative Committee. (3) That a full-time executive secretary responsible to the Committee be designated, particularly when the Legislature is in session. (4) That all forms of proposed legislation be expedited so that the Legislative Committee may have complete reports from all boards, committees and commissions by July 1st preceding the meeting of each legislature. (5) That more factual information and aid be obtained from individuals who propose legislation. (6) That the Chairman of the Legislative Committee, when possible, be a close friend of the Governor. The report also recommended that to make the legislative work more effective that the following actions be taken: (1) Stimulate specialty groups to appoint active legislative committees to make prompt reports. (2) Hold fast on main issues but compromise on minor ones. (3) General support from the medical profession for our political friends, even though we don't agree with all of their philosophies and even though they do not approve of all of our proposed legislation. (4) Support the Commissioner of Public Health inasmuch as he has proven a true friend of the medical profession in Tennessee.

The report further dealt with other activities in which the Committee had been engaged during the past year, particularly the contact with the Washington Office of the AMA, Senators and members of the House of Representatives.

The report concluded with the Chairman discussing the Indigent Care Program and its far-reaching effect on all phases of the medical society.

Report of the Insurance Committee

B. F. BYRD, SR., M.D., Chairman

The report of the Insurance Committee was given by Dr. George L. Inge of Knoxville, a member of the Committee. The report gave the status of the disability coverage of the membership of the Tennessee State Medical Association in the group plan sponsored by TSMA. It was reported that 733 members of the Association are insured under the State Disability Plan. During the year, 94 claims were paid for a total amount of \$65,978.63. Total policies lapsed were 21. Twenty-seven new policies were issued, making a net increase in enrollment of 6.

The report gave the status of professional liability insurance as sponsored by the Tennessee State Medical Association, pointing out that 497 doctors were insured under the plan approved by the House of Delegates a year ago. Reports indicated that there are now a total of 6 claims and 6 possible claims. Two claims have been paid and four suits have been filed for a total of \$255,000. The report stated that all claims have been handled promptly and efficiently.

The report also dealt with death claim forms in use by some insurance companies. The Chairman reported upon death claim forms being objected to in the last session of the House of Delegates and reported upon the study made by the Committee during the recent year. The report indicated that very few companies still use forms discontinued many years ago. It was recommended that the Committee continue its efforts to have such companies discontinue the use of those antiquated forms.

The report also dealt with complaints received concerning health and accident claim blanks. The report stated that the committee had been working on this matter during the past year to see if something could be done to simplify these forms.

The report stated that the Nashville and Knoxville agencies of the American Casualty Company of Pennsylvania had submitted plans for Business Expense Coverage to be approved by the Tennessee State Medical Association. The report stated that the Company is sound financially and well represented in Tennessee. It was recommended that it was a good contract for those desiring such coverage. The premiums are definitely a deductible item on income tax returns. If the plan is approved by the House of Delegates, it will require no further activity by this Association. The proper resolution was prepared and submitted relative to Business Expense Coverage.

Report of the Memoirs Committee

HENRY DOUGLASS, M.D., Chairman

The Committee on Memoirs rendered the following report: "The list is longer than usual and includes 47 doctors whose professional careers were spent between 1900 and 1956. It was in that period that medicine made its most notable progress. In that period more than any other, the Art of Medicine became allied with the basic sciences in a common cause to the end that together more would be accomplished than by any one alone.

"Looking backward into the long history of medicine we can find no other fifty years so productive. No other time when people had more faith in medicine and more hope for its future. Of all this they were a part and not an inconsiderable part.

"As a just and final tribute I can say that the record of these 47 physicians is nothing less than the history of medicine during the first half of the 20th century."

Following these remarks, a list of the 47 deceased members was read. A moment of silent prayer followed, thus concluding the report.

Report of the Symposium Committee on Postgraduate Education

FRANK L. ROBERTS, M.D., Chairman

A detailed activities and statistical report was rendered by the Chairman of the Symposium Postgraduate Education Committee. The report stated that during 1956, the total attendance at the symposium postgraduate programs was 664.

In 1956 a symposium on "Traumatic and Emergency Surgery" was held in seven centers. Panelists for the program were outlined in the report.

A symposium on "Jaundice" was held in three centers. The panelists that conducted this course were listed. "Chest and Abdominal Pain" was the subject of a symposium in ten centers with an attendance of 210.

A symposium on "Cancer—Detection and Treatment" was held in ten centers with a total attendance of 224.

The report stated that the Symposium Postgraduate Education Program operated well within its budget for the year 1956, conducting all courses for a total cost of \$13,830.00. The report enumerated statistically the attendance of physicians by districts where the meetings were conducted. The Chairman thanked members of the headquarters staff, Miss Betty Taylor and Mr. Jack Balfentine for the cooperation and great amount of work performed in relation to the program. He thanked the committee and all panelists for their unselfish and splendid success in putting on the programs. The report questioned whether or not postgraduate programs should be conducted in the larger centers, particularly in Nashville and Memphis inasmuch as Districts 6 and 10 showed the lowest percentage of attendance.

A statistical break-down of attendance in each city where the programs were conducted, was attached to the report.

Report of the Cancer Committee

R. H. MONGER, M.D., Chairman

The Chairman stated that a meeting of the Cancer Committee was called in conjunction with the meeting of the Tennessee Division of the American Cancer Society. Six county societies were reported as requesting cancer films from the committee during the year. A number of civic organizations, church groups, etc., had programs in which speakers were furnished by the cancer society. A great deal of educational work was performed by Dr. R. R. Braund, Memphis. It was reported that in Knoxville several films had been shown before civic clubs with a speaker from the Knoxville Academy of Medicine.

It was reported that an excellent program was conducted in Chattanooga where 300 copies of "Cancer, a Manual for Practitioners" was distributed to the doctors of the county and 25 to dentists.

The report stated that other work along similar lines had been done throughout the state, but no specific record has been presented of this work. The report stated that the opening film on "Bronchogenic Cancer" was shown at the opening meeting of the scientific session of the Tennessee State Medical Association. This film was furnished through the efforts of the Cancer Committee.

Report of the Grievance Committee

A. M. PATTERSON, M.D., Chairman

The report stated that the Grievance Committee had only one case for adjustment during the year. It was stated that the complaint was due largely to misunderstanding. Fortunately the Committee was able to have those concerned to appear in person. A lengthy hearing was conducted and careful investigation was made. The findings of the Committee indicated that the charges against the physician were not justified and were not reasonable.

Report of Prepaid Insurance Committee

JAMES A. KIRTLEY, JR., M.D., Chairman

This report stated that many aspects of the entire health insurance field had been studied by the Committee and the Executive Sub-Committee during the past year. The Tennessee Plan is the most predominant surgical insurance plan in the state at this time. At the end of 1956, 1,200,000 Tennesseans were covered in the Plan. This amounts to approximately 38% of the population of the State of Tennessee. It was pointed out that the plan had shown a phenomenal growth since 1952 and that it was expected that participation by the public will continue.

The first portion of the report dealt with the dependents medical care plan, "Medicare," which

is a contract with the Tennessee State Medical Association and the Department of Defense for the medical and surgical care of the dependents of active duty military personnel. The report reviewed the manner in which the fee schedule was determined and how the contract was negotiated with the Government.

The report stated that one of the most controversial points is the question of an assistant's fee and that the Committee did not have a recommendation on this matter, but would leave it to the discretion of the House of Delegates.

The second phase of the report dealt with the proposed revisions in the Tennessee Plan. It was pointed out how the Executive Sub-Committee had spent many man-hours of time studying possible revisions in the existing Tennessee Plan. It was stated that the California Relative Value Schedule was used as a yardstick to determine the relationship of one procedure to another. Copies of the proposed revision were sent to the president and secretary of each county medical society in the State long before the meeting of the House of Delegates, in order that these societies could be informed of what the committee was studying.

It was reported that on March 19th, the Prepaid Insurance Committee met with all of the insurance carrier representatives including the commercial carriers and non-profit associations. Details of this meeting were outlined in the report.

From the outcome of this meeting, the Prepaid Insurance Committee resolved to make the following recommendations to the House of Delegates. (1) That the proposed Plan A as determined by the Prepaid Insurance Committee be recommended to the House of Delegates to replace the present Tennessee Plan. Plan A would be recommended for sale without any deductible to those buyers who wished to purchase the plan at the increased premium. Those purchasers who did not pay the added premium would be allowed to purchase the plan with a \$10.00 deductible feature. (2) The Committee did not recommend the schedule for higher income groups. (3) The optional rider for in-hospital medical care as presented by the Executive Sub-Committee was found impractical due to a lack of actuarial experience and this proposed plan was not submitted, but the committee determined to continue studying an in-hospital medical care plan. (4) The radiological benefits for treatment of malignant diseases as recommended for inclusion as an optional benefit in the Tennessee Plan was recommended. This fee schedule had been previously recommended by the Tennessee Radiological Society. (5) Concerning multiple coverage of insurance policies, the Committee directed the Chairman to report to the House of Delegates that it had sought legal counsel and found it not advisable to take action at this time relative to multiple coverage. (6) The Committee recommended that insurance companies be required to make available on their claim forms, a

statement over the signature of the policy holder, that the total income of all beneficiaries is certified to be below \$4200 per year.

The report pointed out to members of the House that a mimeographed copy of the final revisions in the Tennessee Plan as recommended by the Prepaid Insurance Committee was available for study. The report stated that the Committee did not recommend any hike in the income limits in the revised Tennessee Plan. The report concluded by stating that it was the wish of the committee to have doctors in all specialties participating in the revised plan.

Report of the Public Service Committee

L. W. EDWARDS, M.D., Chairman

The report stated that during the past twelve months, the Public Service Committee culminated a year-long campaign to get increased funds for the Indigent Hospital Service Program. Governor Frank Clement endorsed the program and set forth the suggested fiscal appropriation in his budget. It stated that the amount of state money combined with federal funds, bring the total available for the biennium in this program to \$3,166,000, or nearly a third of a million dollars more than the amount originally proposed for the project. The report stated that the program will be administered by the State Health Department through a contract with the Welfare Department, which is required by law to act as agent for receipt of all federal funds.

The report singled out the cooperation afforded the public service committee by a number of organizations throughout the state. The report dealt in some detail with the efforts of the committee and its director in producing a film entitled "Battle Against Death" which was used as an educational medium to help obtain financial appropriations for the indigent program.

It was stated that the Committee had gone into great detail in producing and studying the use of television. In this connection, the Public Service Committee appointed a Sub-Committee on Television to investigate the possibility of more thoroughly utilizing television as a medium to carry the health education program to the public.

The Tennessee Medical Press Award for the outstanding medical writing was reviewed and it was reported that the winner was a reporter of the *Memphis Commercial Appeal*. This distinguished piece of news reporting in the field of medicine during 1956 won the acclaim of the five physicians and the ten editors and publishers who controlled the award. The report stated that the education campaign through the press during the past twelve months saw hundreds of news stories and editorials run by the newspapers of this state. It was pointed out that Tennessee now has a practicing physician in each community where a newspaper is published. These physicians have established themselves as contact persons for the newspapers.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Annual Meeting Highlights

● The 122nd annual meeting of the State Medical Association has been successfully completed. An unusual number of physicians were registered and important out-of-state guests were in attendance.

Total Registration 710

● Total registration—710 (548 physicians, 133 exhibitors, 9 interns and residents and 20 members of the headquarters staff and extra employees). Although this was not the largest attendance in Middle Tennessee, it maintained a high average while a number of interesting events attracted the registrants' attention.

Total registration of Woman's Auxiliary—149.

Exhibitor revenue—\$6,825—an increase for exhibitor revenue in Nashville. This represented income from 46 participating exhibitors, the largest number ever to show at a state meeting in Nashville. This was possibly due to occupying additional space in the lobby floor of the Maxwell House and utilizing space for exhibitors on the mezzanine floor. Two scientific exhibits in the field of surgery, were available to members. Again the exhibitors liaison committee rendered valuable assistance, settling many problems that arose on the exhibit floor, thus making for good relations between exhibitors and doctors. The workroom was staffed by competent members of the headquarters staff. They rendered invaluable service to members of the House of Delegates and others.

Business Expense Insurance Plan Approved

● The House of Delegates endorsed a Business Expense Insurance Plan to be underwritten by the American Casualty Insurance Company of Pennsylvania. This is not necessarily a group plan, but it was investigated by the Insurance Committee and endorsed by the House of Delegates for those members of the medical profession who wish to avail themselves of business expense protection. The Knoxville and Nashville offices of this company plan to make the insurance program available to TSMA members who desire to participate.

The President

● Dr. J. Paul Baird, Dyersburg, assumed the office of President, succeeding Dr. R. B. Wood, Knoxville. Dr. Baird is a physician who has served the State Medical Association well. His ideas and energies will be utilized to the fullest in carrying out the duties as President.

The President-Elect

● Dr. James C. Gardner, Nashville, was named President-Elect. He has served for the past five years as Chairman and member of the Board of Trustees, as well as Treasurer. He has given unselfishly of his time and energies to the cause of organized medicine in Tennessee.

Board of Trustees Expanded

● Due to the adoption of the new Constitution, which had been previously on the table since the last session, enabled the Board of Trustees to be expanded wherein two elected trustees will serve from each grand division of the

state. In addition, the Board will consist of the President the President-Elect, the immediate Past-President, the Speaker of the House of Delegates and the Secretary-Editor.

Other Officers Elected

● The Vice-Presidents for the year 1957-58 are Dr. Thurman Shipley of Cookeville, Middle Tennessee; Dr. Moore J. Smith, Chattanooga, East Tennessee; and Dr. Byron O. Garner of Union City, West Tennessee.

Councilors were elected from the even numbered Districts. Councilors for the 2nd, 4th, and 6th Districts were re-elected. Two new Councilors were elected for the Eighth and Tenth Districts, they being Dr. Warren C. Ramer, Lexington, Eighth District and Dr. Duane Carr of Memphis from the Tenth District.

Special Activities Conducted at Annual Meeting

● A gala occasion of the meeting was the President's banquet. The guest speaker, Dr. Clifford E. Barbour of Pittsburgh, Pennsylvania, was an outstanding speaker. Dr. R. B. Wood gave his presidential address and the General Practitioner of the Year Award was made to Dr. Fred A. Martin of Cumberland City. Nearly 400 doctors, their wives and guests attended the banquet. Dr. J. Paul Baird presented a gavel to the retiring President.

GP Award

● One of the feature events of the President's banquet was that of the award made to Dr. Fred A. Martin, the outstanding general practitioner of the year. An effective presentation speech was made by the Speaker of the House of Delegates, Dr. Robert N. Buchanan, Jr.

Special awards went to the winners of the Health Project Contest. These awards were made by Dr. James C. Gardner, Chairman of the Board of Trustees and Treasurer. The winning essayists, representatives of Cohn High School in Nashville, received a \$500 bond presented by the Tennessee State Medical Association. The subject of the winning essay was a project on water safety, "It's a Family Affair."

Special Merit Awards to Drs. Edwards and Shoulders

● The President presented a plaque to Dr. L. W. Edwards, retiring Chairman of the Public Service Committee. Dr. Edwards has contributed much to organized medicine in Tennessee.

A plaque also was awarded to Dr. H. H. Shoulders for his leadership in organized medicine in Tennessee, as well as when he served as secretary and president of the American Medical Association.

House of Delegates

● Heated debates were heard on many important subjects. You are referred to the abstract of the proceedings of the House of Delegates, Board of Trustees as well as those of the Council. All committee and officers reports are abstracted in this issue and they are testimony to the outstanding job performed by the membership, official committees and members of the House of Delegates.

Membership Report

● As of January 1, 1957, membership of TSMA continued to show an increase over previous years. The membership report indicated 179 more members than at the close of the year 1955. The membership report totaled 2,526 members of all types. 2,224 members belong to the American Medical Association. Each year brings the Association membership to a new high.

Woman's Auxiliary

● The Woman's Auxiliary conducted another outstanding meeting. Mrs. Joseph D. Anderson of Nashville was installed as President. The Auxiliary has been most active in sponsoring the Health Project Contest, aid and support to the American Medical Education Foundation and many other worthwhile projects.

Public Service

THE TENNESSEE TEN

**Certificate
Of Merit
Presented**



Dr. R. B. Wood, President of TSMA, presents a certificate of merit to Dr. L. W. Edwards, retiring chairman of the Public Service Committee, at a surprise ceremony during the President's Night Banquet.

Dr. Edwards Honored

● Dr. L. W. Edwards, retiring chairman of the Public Service Committee, was awarded a certificate of merit at the President's Night Banquet at the Richland Country Club during the recent 122nd Annual Meeting of TSMA. The certificate, presented as a surprise ceremony by Dr. R. B. Wood, signaled the many achievements credited to Dr. Edwards' untiring efforts. Dr. Edwards was chairman of the Public Service Committee since its organization in 1950.

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Dr. Scoville New Committee Chairman

● The new chairman of the Public Service Committee is Dr. Addison B. Scoville, Jr. Dr. Scoville was elected at a meeting of the Public Service Committee April 8, and his selection was confirmed by the Board of Trustees. A change in the by-laws, approved by the House of Delegates at the Annual Meeting, gives the Board of Trustees the prerogative of naming the PSC chairman.

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Press Code Out of The Mothballs

● The Public Service Committee, at its April 8 meeting, instructed the Public Service Director to modernize the press relations code adopted some years ago by the committee. It was pointed out that much of the difficulty encountered by newsmen in attempting to obtain information from the medical

profession necessary to write news stories stems not from a conscious effort to antagonize or to conceal but from misunderstanding. It was further pointed out that as the reporter is acting in good faith in making an honest effort to get the facts, so also is the doctor duty bound to look first to the best interests of his patient.

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TPA Eager

● The Tennessee Press Association and the Tennessee Broadcasters Association have been contacted. The first reply has come from Glenn McNeil, Secretary-Manager of the TPA. Says McNeil, "The Tennessee Press Association welcomes such interests on the part of your members and will cooperate to whatever extent is necessary to establish a workable code."

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Report on TV Programs

● The Public Service Committee accepted a report from the Director which, in effect, suggested that no wholesale venture into the field of television health education programs be made at the present time. The report mentioned that supervision of the production of such programs requires a large number of man hours and that the health education objectives of the Association must also be presented through the other two media, i.e., radio and newspapers. The Director was instructed to continue study of the possible use of TV in this respect, and submit a report, along with recommendations, at a later date.

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News Coverage of Annual Meeting

● The cooperation of all news media in reporting the events of the Annual Meeting was most gratifying. At deadline, the clipping service had not yet supplied this office with copies of stories carried in newspapers outside Nashville. However, the two Nashville dailies, the Nashville Banner and Nashville Tennessean, carried 25 separate news stories covering all aspects of the meeting, with a total of 328 column inches devoted to reporting the numerous activities. In addition, the two papers printed 19 pictures, and ran two highly favorable editorials. Splendid cooperation was also furnished by WLAC-TV, WLAC Radio, WSM-TV, and WSIX-TV, as well as the other radio stations in Nashville.

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Placement Service Active

● Efforts are being made to enlarge and broaden the usefulness of the Doctor Placement Service. About 30 physicians are now seeking positions through the service, but not enough communities with populations large enough to support a doctor are listed. Not only does the service aid communities in securing doctors, it is always pleased to help doctors locate associates or assistants when their practices require the help of another physician. Suggestions as to how the program can be improved are always welcome. Through the cooperation of the Public Service Office and the Tennessee Medical Foundation, through the assistance of the field secretary, Mr. Theron Wilson, the service stands ready to serve the doctors and communities of Tennessee.

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Sellers' Market in Salk Vaccine Continues

● Information reaching this office from the A.M.A., U. S. Public Health Service, National Foundation for Infantile Paralysis, and vaccine manufacturers indicates strongly that the present shortage of Salk Vaccine will continue well into the summer. However, county societies are urged to continue their efforts to obtain the vaccine to stock doctors' offices and to provide for any clinic phase contemplated.

JACK DRAKE

Public Service Director

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The Health Project Contest sponsored by the Public Service Committee and the Woman's Auxiliary to the TSMA was reported of paramount importance to health education. The Chairman also reported upon the placement service operated by the Public Service Committee, stating that 26 doctors were presently seeking locations in the state and a number of physicians had been placed in localities in Tennessee during the past year.

The Chairman reviewed the work of the Public Service Director.

The report concluded by stating the present work of the Committee and one of its most important functions, that being the polio inoculation program throughout the state, which is being conducted under the code name "Operation Pin Cushion." This program is to inoculate against poliomyelitis all persons to forty years of age. The report went into detail on the activities of the Committee concerning the polio program.

Report of Rural Health Committee

W. N. Cook, M.D., Chairman

The report dealt with the objectives of the Committee and reported upon projects considered during the past year. It was pointed out that the principle objective was to cooperate with farm groups and assist in any program designed to benefit rural and farm people with regard to health. The report stated that "Rural America is looking to doctors for leadership" and now was the time for this committee to exercise its leadership.

The report stated that much effort had been spent in recent years in fighting socialized medicine and it was believed by the Committee that a constructive program should be carried out by the cooperative efforts of the medical profession and farm organizations to improve rural health in a positive way in order to prevent socialized medicine. It was pointed out that public relations at the grass roots level was a necessity. The report stated that many physicians are busy and could not devote necessary time and work to a program of this type. The report stated that the Rural Health Committee had the cooperation of the Public Service Director for specific projects.

The Tennessee Medical Foundation's activities were also discussed since they paralleled to some extent the services performed by the Rural Health Committee.

The report concluded with several recommendations. (1) That Tennessee physicians take advantage of the public service program which can show our farming population that we are sincerely interested in their problems. (2) That each county medical society appoint a committee on Rural Health consisting of one or more physicians. (3) That additional personnel be made available to the Rural Health Committee to do the detail work and the travel necessary to carry out a program. (4) That a study be made of the advisability of reimbursing members of all committees for their expenses of attending meetings or for

necessary travel. (5) That the Rural Health Committee be revised—including the Chairman if necessary to secure members who will be effective in carrying out a good program.

Report of Industrial Health Committee

THOMAS A. LINCOLN, M.D., Chairman

The report stated that the only activity of the Industrial Health Committee during the year had been the completion of the survey of industrial medical practice in Tennessee, which was begun during the previous year. This material has been compiled in the form of a more extended report and will be submitted at a later time.

Report of the Liaison Committee to the U. M. W. A.

B. M. OVERHOLT, M.D., Chairman

In the absence of Dr. Overholt, this report was made by Dr. Cecil Newell, a member of the Committee. The report stated that no complaints from the medical profession or from the United Mine Workers of America Area Administrative office had been received during the past year. No problems had been brought to the attention of the Committee.

Report of the Committee on Veterans' Affairs

ERNEST G. KELLY, M.D., Chairman

The report of the Veterans' Affairs Committee stated that the Committee did not conduct an official meeting during the year. The Chairman attended a meeting of the Chairmen of all State Veterans' Committees for the Central Division of the United States in Chicago on January 26, 1957.

At the Chicago meeting, the present policy of the AMA on Veterans' Care was announced. This policy was that the AMA holds that the treatment of service-connected disabilities and only service-connected disabilities should be the responsibility of the government.

The report stated that the chairmen present at the meeting were requested to bring to their respective state associations the following data and recommendations: (1) That a large number of accident and compensation cases are being treated at veteran hospitals. (2) That the VA hospitals have gone far beyond taking care of wounded veterans or service-connected cases and have launched upon a large intern and resident training program. (3) It was recommended that the physicians of each State meet with the local and regional consultants of the VA hospitals and ascertain their views on the present AMA policy and attempt to sell them on this policy. (4) That physicians throughout each state, should meet and talk with the different veterans' organizations in their communities. (5) It was pointed out that the budget of the Veterans' Administration is now the 3rd largest in the nation and is growing rapidly. (6) It was pointed out that a bill has now been introduced in Congress that would require an applicant for admission to a VA hospital to list

his health insurance, his income and his financial status. We should urge the passage of this bill. (7) The VA Hospital Administrators boast that more than 50% of their admissions are on recommendations of the patient's family physician. This is due to the fact that many people think that they have to have a note from their family physician before they can be permitted to enter a VA hospital. (8) It was noted that the Veterans' Administration has become a Frankenstein that will gradually destroy not only the private practice of medicine but the Nation as well, unless this apathy and indifference to government medicine on the part of the medical profession is reversed.

These recommendations concluded the report.

Report of the Tuberculosis Committee

ROBERT L. MCCracken, M.D., Chairman

The report stated that the Tuberculosis Committee of the State Medical Association had acted as a stand-by committee and there had been no requests for action made upon the present committee. The report stated that on March 16, 1957 a letter was received from the Board of Trustees of the State Tuberculosis Hospitals inviting members of the Tuberculosis Committee to meet with the Board of Trustees of the Hospitals at their quarterly meetings. The invitation was to the Committee inasmuch as there had been various questions raised in regard to admission of patients to tuberculosis hospitals. The report recommended that the invitation be accepted.

Report of the Committee on Mental Health

FRANK H. LUTON, M.D., Chairman

The report stated that no formal meeting of the Committee had occurred during the year, however, some activities of several members of the Committee should be mentioned. It was stated that the Chairman attended the Third Annual Conference of Mental Health representatives of State Medical Associations sponsored by the AMA Council on Mental Health, which met in Chicago on November 16 and 17, 1956. Subjects discussed at this conference were: (1) Use of Hypnosis in Medical Practice; (2) Benefits and Problems Encountered by the General Practitioner with the Use of the Newer Tranquilizing Drugs for Patients with Emotional Illness; (3) The Alcoholic Patient as a Medical and Hospital Management Problem; (4) Inpatient Psychiatric Care of Children.

The report stated in summary the results of the deliberations: That Hypnosis is useful in certain situations, but its use is fraught with some dangers. It is used frequently by dentists and by a few obstetricians and gynecologists. It was felt that the teaching of the technique of hypnosis was easy but that the teaching of the risks and the indications is a task for a well-qualified member of the medical profession.

The report pointed out that the group reported on a small survey taken on the use by general

practitioners of tranquilizing drugs. It was stated that the general practitioner and the public were becoming more aware of the great number of persons and patients who had significant emotional difficulties.

The group concerned with alcohol discussed a resolution that had been formulated by the Committee on Alcoholism of the AMA Council on Mental Health. This resolution was to the effect that selected patients with the diagnosis of alcoholism be admitted to general hospitals without prejudice. Further discussion revolved around the definitions of alcoholism, the scope of the problem, attitudes of the physician toward the alcoholic and methods of treatment.

The report also covered the discussion of the in-patient care of children and stressed the inadequate facilities for the care of psychotic children and also the severely neurotic child and the child with severe psychosomatic disorders.

The report also pointed out that members of the Mental Health Committee had been active in the promotion of mental health legislation during the recent session of the Tennessee General Assembly. Collaboration with the Tennessee State Department of Mental Health, the local and State Mental Health Societies and other groups interested in the provision of better treatment and training facilities in the field of mental health had been maintained. The report pointed out the results in an increase in appropriations to the Department of Mental Health in the State of Tennessee.

The report concluded with the following recommendations: (1) A sub-committee on alcoholism of the Mental Health Committee to be composed of a psychiatrist, an internist, and a general practitioner, be appointed. (2) The inclusion of a pediatrician and a general practitioner in the membership of this Committee. It is urged that there should be a staggering of the tenure of the different members in order to have at all times persons who are familiar with the activities and goals of the Mental Health Committee.

Report of Health Project Contest Committee

MRS. CLARENCE LANDHAM, Chairman

Mrs. Landham reported as Chairman of the Health Project Contest Committee of the Woman's Auxiliary to the Tennessee State Medical Association. The report pointed out that the fourth annual health project contest was completed April 1. Twenty-seven high schools in the state serving an estimated 18,304 children participated. The report pointed out the manner in which the rules were established for determining the winning health project. In addition, the report stated that the contest is growing in interest and a greater participation was realized in 1957 over 1956. The report stated that this year's completed project participation is a five-times increase over previous years. The completed projects and their sponsoring schools were as follows: Cohn High School

of Nashville, winner of the \$500 first prize. The second place award went to Lee College of Cleveland, Tennessee on the general subject of "Polio." The winning project was entitled "It's a Family Affair" and had to do with water safety.

Report of Legal Liaison Committee to the State Bar Association

GEORGE K. CARPENTER, M.D., Chairman

The Chairman stated that the Committee has now been functioning for two years. It has worked closely with a similar committee from the Tennessee Bar Association. Medico-Legal symposiums and clinics have been held in the following cities: Memphis, Jackson, Nashville, Chattanooga, Knoxville, Johnson City. The report stated that in 1956, representatives of the Medical Association and the Bar Association met to formulate an inter-professional code. It was pointed out that the code had been widely distributed to doctors and attorneys throughout the state. It was stated that the Law Department of the American Medical Association had been giving special study to this subject and the sponsoring of regional medical-legal symposiums, one which was held recently in Atlanta and attended by the Chairman.

The report went into a detailed discussion of the subjects covered in the inter-professional code.

The report recommended that the Inter-Professional Code Committee should consist of the same members as those who served on the Legal Liaison Committee to the Bar Association. The report recommended that the Liaison Committee to the Bar Association be continued. The report further recommended the appointment of the Inter-Professional Code Committee to consist of the same members as composed the Legal Liaison Committee. It was likewise recommended that the Tennessee State Medical Association authorize its Legal Liaison Committee and its Inter-Professional Code Committee to make revisions of the code from time to time as are recommended by the joint committees of the two associations.

The report concluded with a subject discussion of the Inter-Professional Code. The code consisted of the Preamble, Inter-Relationship, Preliminary Conference, Records and Reports, Expert Witness Fee, Court Attendance, and Administration of the Code.

Report of the Study Committee for Expansion of General Practice Services of the U. M. W. A. Welfare and Retirement Fund

GEORGE S. MAHON, M.D., Chairman

This report stated that until shortly before the meeting of the House, this Committee had nothing concrete to report. The report stated a letter was received from Dr. Warren E. Draper, who is Executive Medical Officer of the U. M. W. A. Health and Welfare Fund. In this letter Dr. Draper indicated his approval of the principles of the proposals which were adopted last year by

the House of Delegates and requested that the Committee proceed to put these proposals into effect.

Report of the Headquarters Furnishings and Appointments Committee

DAUGH W. SMITH, M.D., Chairman

The report stated that the original Building Committee appointed for the purpose of supervising the construction of the headquarters office building was discontinued upon completion of the building. In its place, the Board of Trustees appointed the same personnel to function as the Headquarters Building Furnishings and Appointments Committee. The primary duty of this Committee has been to recommend care and improvement of the headquarters office building.

The report outlined the manner in which the conference room in the headquarters office had been furnished during the past year and the improvements on the grounds, including paving the parking area in back of the headquarters building. It was pointed out that the headquarters office and its conference room is used to conduct many affairs of the Association and the Woman's Auxiliary to the Tennessee State Medical Association.

Study Committee on Legal Definition of Medicine and Medical Practice

FRANK H. LUTON, M.D., Chairman

The formation of this Committee and its work has resulted from the growing demands of certain non-medical groups for licensure by the Board of Healing Arts, thereby necessitating a study of the legal definition of medicine and medical practice for the primary purpose of protecting the sick patient from persons who without proper qualifications might seek the privilege by license to treat these patients. The report stated that the immediate problem of this Committee is that of the clinical psychologists who already have a law, permitting them to be licensed by the Board of Healing Arts, to practice psychotherapy under vaguely defined medical supervision. The report stated that a meeting of the Committee in December recommended that a resolution to the State Legislature be made requesting the establishment of a Commission to study within the next two years, the psychology law in the light of the dissatisfaction expressed in it by many physicians in the state. It was proposed that this Commission be appointed by the Governor and that it should be composed of three psychiatrists, three clinical psychologists, and the Executive Officer of the Board of Healing Arts.

The report stated that the Committee felt that the law licensing psychologists to practice psychotherapy was bad due to the following reasons: (1) it certifies a non-medical group for the treatment of mentally sick patients with loosely defined areas of supervision, (2) it promotes a philosophy of separation of mind and body that

is not in keeping with modern concepts of mental illness, (3) it designates the field of counseling to the province of the clinical psychologist.

The report stated that the Committee believed that it would be difficult to repeal the psychology law and that it would be wise to establish a Liaison Committee between the psychologists and psychiatrists to discuss some of the differences and dissatisfactions that exist in the law with special consideration for the needs of the patient who is sick. The report stated that upon the advice of Mr. Charles Cornelius, Council for the Legislative Committee, and Mr. B. B. Gullett, attorney for the Board of Healing Arts, it was believed that a Commission authorized by the Tennessee State Legislature would be more beneficial to study this problem.

A joint resolution was prepared and presented in the Tennessee General Assembly wherein during the next two years, the Legislative Council will study the present functioning of the psychology law and make recommendations to the next legislature. The report also stated that the Committee recommended that other non-medical groups such as the audiologists be discouraged from seeking licensure. It also recognizes its responsibility for further study of the legal definition of medicine and of medical practice and for the recommendations of necessary changes in the Board of Healing Arts Law where such needs exist.

Tennessee Committee—American Medical Education Foundation

JOSEPH W. JOHNSON, M.D., Chairman

The report pointed out the efforts made to stimulate giving to the medical schools, a project suggested by Dr. R. B. Wood, who for the first time appointed a special Committee to work with the American Medical Education Foundation. Heretofore, gifts had been largely stimulated by school and national promotional efforts rather than medical society participation in the State of Tennessee. The Committee consisted of representatives from each Councilor District. Articles in the JOURNAL and editorials by Dr. Wood were instrumental in accomplishing an increase in giving.

The report stated that a particularly interesting source of funds and the largest deriving from the state, resulted from the actions of the Chattanooga-Hamilton County Medical Society which gave \$5,000 from its funds under the proviso that this grant be matched. Chattanooga business men were sufficiently impressed by this action in support of the medical schools by organized medicine in the community to match the funds. The \$10,000 derived from this community were equally allocated to Vanderbilt University, the University of Tennessee and Meharry Medical schools. This type of community participation in support of the medical schools under the stimulus of organized medicine is offered as a device which might be considered by other societies in the larger cities of the state.

The report concluded by stating that one member of the Committee represented the Tennessee State Medical Association at the national meeting in Chicago where many new prospectives and constructive ideas were presented.

Special Reports

Report of the Woman's Auxiliary to the Tennessee State Medical Association

MRS. E. T. PEARSON, President

The report pointed out that membership continues to grow in the Auxiliary and at present 1230 members in 16 component auxiliaries comprise the membership. This is an increase of 104 members over the previous year. The report further stated that in the year ahead, it was hoped that greater interest from the 34 county medical societies that do not have auxiliaries, might be increased.

It was pointed out by Mrs. Pearson that an increasing interest in the county auxiliary and the individual member in the American Medical Education Foundation existed. Through Auxiliary efforts, \$1,690.00 was contributed to the AMEF fund during the year 1956. The Auxiliary pledged its continued influence and cooperation with the Foundation Board.

The report pointed out that the recruitment projects for the year had been enthusiastically pursued. Eight Auxiliaries maintain nurse loan funds. Thirteen loans to student nurses had been made, totaling \$1,289.00. Six nurses have recently completed their training and are repaying the loans. The Auxiliary maintains a loan fund exceeding \$10,000 and from this fund eighteen medical students were given assistance during the year.

It was pointed out in the report that the Auxiliaries and individual members studied medical legislation, cooperated in civil defense programs, mental health, children's bureaus and many other projects related to organized medicine. One Auxiliary reported 12,000 hours given to volunteer service in civil defense. Other activities in which the Auxiliaries acted are such programs as polio, cancer, tuberculosis, heart, Red Cross, Girl Scout and blood typing programs. Five Auxiliaries reported 13,000 hours given to volunteer services in these projects. Many Auxiliaries reported appropriate programs in the observance of Doctor's Day. A complete outline of the Auxiliary's work in the health project contest was presented.

The report outlined the field work performed by the President and President-Elect, stating that 16 Auxiliaries had been visited. The report was complimentary of the Tennessee State Medical Association's first County Medical Society Officers Conference and the fact that the President and President-Elect of the Woman's Auxiliary were attendants at this conference.

The report concluded with appreciation being expressed to the President of the Tennessee State Medical Association and members of the head-

quarters staff who rendered valuable assistance and support to the Auxiliary projects during the year.

Report of Delegates to A.M.A.

CHAS. C. SMELTZER, M.D., Chairman

The Chairman outlined his report in considerable detail of the business transacted at the June 1956 meeting of the House of Delegates of the American Medical Association in Chicago and the November Clinical Session of the AMA House of Delegates in Seattle, Washington. The report stated the officers elected and many of the measures adopted by the House of the AMA and the explanation was given on the passage of a number of important issues. These included Hospital Accreditation that covered a great number of suggestions. Other subjects covered in detail were Graduates of Foreign Medical Schools, Private Practice by Medical School Faculty Members, Federal Aid to Medical Schools, Premature Drug Publicity, etc.

The report outlined the subjects covered at the clinical meeting in Seattle, November 27-30, 1956. Main topics discussed were Medical Ethics, Veterans' Medical Care, Radioactive Isotopes, Continuance of the AMA Interim Sessions, Hospitalization for Alcoholics and a report of the Committee on Medical Practices.

The subject that took up a great deal of time

and one of the most interesting presented had to do with Medical Ethics and the revision of the Principles of Medical Ethics, originally submitted at the June 1956 annual meeting in Chicago. The proposed short version of the Principles was re-submitted with some changes based on suggestions received last June by the Council on Constitution and By-Laws.

Another subject discussed at considerable length was Veterans' Medical Care. The policy adopted relative to this matter with respect to the provision of medical care and hospitalization benefits for veterans in Veteran Administration and other Federal Hospitals, was that new legislation be enacted limiting such care to veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated. The report concluded by stating that the Board of Trustees of the AMA were directed to continue its investigation of the practicability of developing a statement of AMA policies and to arrange for the periodic publication of revised versions of such a policy statement. The report concluded by action instructing the Board of Trustees to the AMA to accentuate cooperation between the American Medical Association and the American Bar Association to the end that a bill of the Jenkins Keogh type be enacted at the next session of Congress.

J. E. BALLENTINE
Executive Secretary

Postirradiation Fractures of the Neck of the Femur. W. H. Stephenson and B. Cohen, *Bone & Joint Surg.* 38-B:830, 1956.

Postirradiation fractures of the neck of the femur, when seen, usually result from radiotherapy given for malignancies of the pelvic organs. A series of 21 fractures of the femoral neck in 17 patients is reported. Histological study was made on the femoral heads of two patients which came to necropsy and from one patient who was subjected to arthroplasty of the hip. Osteoporosis is a prominent feature without evidence of increased osteoplastic activity. Obliteration of the blood supply was not found to be responsible for the bone changes.

The majority of patients complained of pain in the hip preceding the fracture by several weeks or several months. The pain may be located in the hip, referred to the knee, or may simulate sciatica. In a few patients, the fracture was precipitated by trivial injury and in some patients the fracture appeared to be spontaneous in onset,

without prodromal symptoms. A remarkable degree of voluntary control is often well maintained even when the fracture has become apparent radiographically. There appears to be no clearly defined line of treatment for these fractures of the femoral neck. The prognosis is good and compares with the prognosis of adduction fractures of the femoral neck. In this series of 21 fractures of the femoral neck, 12 united by bone and 2 have incomplete bony union. There were 2 cases of necrosis and collapse of the femoral head. Two patients with unilateral fractures died. One patient was subjected to an arthroplasty and one patient was followed for only eleven months.

It is important to recognize that this fracture does not appear to result from metastas's to the femoral neck although, of course, metastatic invasion may be seen. This being true, it is, therefore, advisable to treat the fracture as indicated, without necessarily offering a poor prognosis to the patient. (Abstracted by Thomas F. Parrish, M.D., Nashville.)

Minutes of the Annual Meeting of the Board of Trustees of The Tennessee State Medical Association April 10, 1957—9:00 A.M. Maxwell House Nashville, Tennessee

The Board of Trustees of the Tennessee State Medical Association convened on April 10, 1957, in a regular meeting conducted at the Maxwell House in Nashville.

Members of the Board present were:

Dr. Chas. C. Trabue, IV, Chairman,
Nashville
Dr. J. Paul Baird, Dyersburg
Dr. R. N. Buchanan, Jr., Nashville
Dr. James C. Gardner, Nashville
Dr. Henry T. Kirby-Smith, Sewanee
Dr. Harmon L. Monroe, Erwin
Dr. Ralph O. Rychener, Memphis
Dr. Daniel R. Thomas, Knoxville
Dr. Julian K. Welch, Jr., Brownsville
Dr. R. B. Wood, Knoxville

Members of the Board absent were:

Dr. R. H. Kampmeier, Nashville

Others present were:

Mr. J. E. Ballentine, Executive Secretary,
Nashville

Mr. Jack Drake, Public Service Director,
Nashville

I. Dr. James C. Gardner, Chairman, called the meeting to order. Since this was a regular meeting following the final session of the House of Delegates, and inasmuch as adoption of the new Constitution enabled an enlargement of the Board, the Chairman welcomed the new members of the expanded Board.

II. The first order of business was to elect a permanent Chairman. Dr. Gardner, the previous Chairman, occupied a place on the Board as the President-Elect and therefore a new Chairman was in order.

Dr. Buchanan nominated Dr. Chas. Trabue to be Chairman and Treasurer. Dr. Trabue was unanimously elected and assumed the chairmanship.

III. The Board discussed the matter of regular meetings and whether it would be necessary to meet more often than that specified in the Constitution and By-Laws. The expanded work of the Board was dis-

cussed at length, after which Dr. Baird moved that the regular meetings be kept at two per year with other meetings to be called when necessary. This motion was seconded by Dr. Rychener, after which it was voted upon and adopted.

The Board discussed the selection of an Executive Committee for the purpose of expediting many of the details of management that occur between regular meetings.

Upon motion made by Dr. Rychener and seconded by Dr. Thomas, the Executive Committee was selected to be composed of six members, which included Dr. H. L. Monroe, East Tennessee; Dr. J. Paul Baird, President, West Tennessee; and the four Nashville members of the Board. These were Dr. Buchanan, Dr. Gardner, Dr. Kampmeier and Dr. Trabue, Chairman. This motion was adopted.

The Executive Committee was empowered to act between regular meetings of the Board of Trustees. It was determined that the Executive Committee would report its actions to the official Board.

IV. The Chairman requested whether or not the Board wished to have the minutes of the previous session read. He stated that the minutes had been printed and mailed to all former members of the Board.

Upon motion made by Dr. Wood, properly seconded and passed, the Executive Secretary was instructed to supply the new members of the Board with copies of the minutes of the two most recent meetings.

V. There was no other old business to be determined.

VI. New Business:

(1) The Financial Audit for 1956 was presented and explained by the Executive Secretary and those members of the Board who had previously examined the audit. Following the questions and discussion, Dr. Monroe moved that the audit be accepted as presented. This motion was duly sec-

onded and the 1956 audit of the Association's fiscal affairs was approved.

(2) The first quarter financial statement was reviewed and discussed. This covered the fiscal operations of the Association for the first three months of 1957. The expenditure allowed for television was explained in detail by the Executive Secretary, after which the motion was made by Dr. Monroe, seconded by Dr. Wood and adopted wherein \$1,000 would be taken from the contingency fund for use in the Public Service Committee's television activities for the remainder of 1957. This amount will adjust the budget and repay the over-expenditure required by the movie "Battle Against Death" and will leave a balance of approximately \$800 to be spent on television for the remaining nine months of 1957.

(3) The Executive Secretary requested approval of the Board of Trustees to purchase a secretarial desk for the Postgraduate Committee. The request was approved. The motion was made by Dr. Buchanan, seconded by Dr. Rychener and adopted.

(4) The financial report for the first quarter of 1957 covering the Symposium Postgraduate Committee's operations was reviewed and approved by the Board.

(5) The Executive Secretary outlined to the Trustees the amount of surplus Postgraduate funds available that should be invested. It was the Board's opinion that any funds ear-marked for the Symposium Postgraduate program and not being used, should be included in the Association's investment portfolio and the Board approved such investment, directing the Treasurer and Executive Secretary to make the investment in keeping with the policy of the Association's investment program.

(6) The Executive Secretary reported relative to the financial condition of the Journal of the Tennessee State Medical Association, pointing out that advertising revenues were increased in 1956 in the amount of 24.8 per cent. A fifteen per cent increase was put into effect January 1, 1957.

(7) A memorandum dated March 11 from the Chairman of the Public Service Committee to the Board of Trustees was reviewed. The memorandum is a part of the

official minutes. This matter had to do with the expansion of the Committee's activities in the field of television and the possible necessity of additional personnel for this project. Dr. Gardner discussed this matter and stated that he did not believe that the memorandum required action by the Board at this time.

(8) A letter was read from Dr. R. B. Gourley, Secretary of the Memphis Society of Pathologists. The letter objected to advertisements in the State Medical JOURNAL, offering laboratory services. The Memphis Pathologist Society particularly objected to an advertisement offering "protein bound iodine determinations" to physicians. The Board adopted the policy that such laboratories advertising in the JOURNAL should have a physician as medical director and his name should be included in such advertisements listing him as the medical director.

(9) The Board of Trustees considered the matters referred as a result of action taken by the House of Delegates. The first item dealt with the report of the Rural Health Committee wherein additional personnel and financing was involved. The Board adopted the policy that when the Rural Health Committee presents a proposal in detail, consideration will be given to such a request. The action also included notification of the Chairman of the Rural Health Committee on the action of the Board.

(10) The report of the Mental Health Committee was considered since it recommended that a sub-committee be named on alcoholism. The Board approved a sub-committee for alcoholism and empowered the Chairman of the Mental Health Committee to appoint the sub-committee members and submit the names to the Board of Trustees for confirmation. The formation of the sub-committee should consist of members from the state at large.

(11) The request of the Legal Liaison Committee to the State Bar Association was discussed wherein an appointment would be made of an Inter-professional Code Committee. The Trustees empowered the Executive Committee to confer with the Chairman of the Legal Liaison Committee relative to appointment of the members to

compose the Inter-professional Code Committee.

(12) TSMA Resolution No. 5 concerning the Outstanding Physician of the Year Award was discussed. Comments were made by Dr. Welch, Dr. Monroe and Dr. Buchanan. It was the Board's opinion that the criteria for selection for the award should be thoroughly spelled out in a letter to all county medical societies and should be presented well in advance of the 1958 annual meeting. No other action was required of the Board on this matter.

(13) Since the regular annual meeting date for 1958 will occur on Easter Sunday, the House of Delegates referred this matter to the Board of Trustees for selection of another date other than Easter for the beginning of the annual meeting in 1958. Contact was made with Dr. Shilling in Gatlinburg and the dates of April 20-21-22 and 23 were found to be available, and the Board set the above dates for conducting the annual meeting in Gatlinburg, Tennessee.

(14) TSMA Resolution No. 7 discussed by Dr. Gardner since the resolution had to do with a study concerning the duties of headquarters office personnel. The matter was discussed at considerable length and comments made by all members of the Board. It was pointed out that the central office staff will need additional help, however, the Board believed that more study will be necessary before determining how this expansion in personnel should be financed. The Board took the following action: It approved the employing of additional personnel when needed in the headquarters office. The motion was made by Dr. Buchanan, seconded by Dr. Welch and adopted. The method of employment and salaries will be left to the discretion of the Executive Committee of the Board. This motion was made by Dr. Kirby-Smith properly seconded and adopted. The method of financing was not settled as the Board desired actual experience with additional personnel before determining a recommendation for an increase in dues.

(15) A letter was read by the Executive Secretary from the American Association of Physicians and Surgeons, requesting the

Tennessee State Medical Association to sponsor an essay contest in the field of political, social and economic problems which affect medicine. After discussion of this matter, a motion was made by Dr. Kirby-Smith not to sponsor the contest. The motion was properly seconded and adopted.

(16) Dr. Buchanan pointed out that since recognition was taken in the House of Delegates of the hospitality of the Nashville Academy of Medicine during the meeting of the Association, he recommended that a letter be forwarded to the arrangements committee from the Nashville Academy of Medicine and the President of the Woman's Auxiliary of the Nashville Academy of Medicine, thanking them for the hospitality during the meeting of the Association in Nashville.

(17) Dr. Buchanan requested that at the fall meeting of the Board of Trustees, it be placed on the agenda to discuss whether or not the report of the Woman's Auxiliary and the report of the Chairman of the Health Project Contest should be made to the House of Delegates. He stated that he would like to discuss at the fall meeting the possibility of having all officer and committee reports submitted far enough in advance to send copies to all delegates and reference committee personnel. These items will be included on the agenda for the fall meeting of the Board.

(18) The Trustees reviewed and discussed a memorandum from the Executive Secretary dated March 21st relative to revisions in committee structure of the Association. It was believed that some of the existing committees were duplicating and paralleled the activities of other committees. The memorandum suggested that the Committee on Veterans Affairs be renamed and called the "Committee on Governmental Services" with this Committee to include the activities of the existing "Veterans Affairs Committee." This recommendation was accepted. The motion was made by Dr. Rychener, seconded by Dr. Wood and approved.

Since the Committee on Autopsy had been purely a stand-by committee and had not had any business to report for the last

two or three years, it was recommended that this Committee be discontinued. This action was approved.

It was recommended that the Legal Liaison Committee to the Bar Association be renamed "Committee on Medical-Legal Relations." A motion to rename this Committee was made by Dr. Welch, seconded by Dr. Rychener and adopted.

The Board directed the Executive Committee to discuss the change in the name of the Committee with the Chairman of the Legal Liaison Committee.

The Board approved the elimination of the Liaison Committee to the Public Health Council since this committee seemed to be a duplication of the Liaison Committee to the Public Health Department.

The Board approved the recommendation to change the Emergency Medical Services Committee wherein it would be renamed "The Committee on Civil Defense."

The Board approved the recommendation that the present Industrial Health Committee be renamed and its duties expanded wherein the committee would be called "Committee on Industrial Health and Workmen's Compensation."

The Board approved the elimination of the Study Committee on Liability Insurance since this matter was now being handled by another committee. A "Committee on Chronic Illnesses" was approved.

(19) The Board appointed the standing committees of the Association for the year 1957 and 1958. At the conclusion of naming the standing committees, the Board authorized the President to appoint the personnel of the special committees of the Association for the next year.

The Board having concluded its business, the meeting adjourned at 2:00 P.M.

J. E. BALLENTINE

Executive Secretary

Popliteal Cyst—a Clinicopathologic Survey. R. Joe Burleson, M.D., William H. Bickel, M.D., and David C. Dahlin, M.D., Bone & Joint Surg. 38-A:1265, 1956.

A series of 83 operations performed for popliteal cysts is reported. Forty-six cysts seemed to arise from bursae, usually the gastrocnemio-semimembranosus bursa, and 26 cysts existed as herniations of the synovium. Eleven cysts arose from an indeterminate site. The cysts communicated with the knee joint in 54 instances. Five patients had recurrences of the cyst postoperatively, usually within the first two to three months. In the series of 82 patients who had 83 popliteal cysts, 34 were associated with intra-articular disease. The most common intra-articular disease was osteoarthritis and rheumatoid arthritis, and less frequently seen was an injury to the cartilage, osteochondromatosis, fibrositis and nonspecific synovitis. The authors conclude that the name popliteal cyst is preferable to all the other names which have been suggested for this common disease since, regardless of where the cyst arises, the lesions appear to behave alike clinically and pathologically and have the same indications for treatment and terminate similarly. (Abstracted by Thomas F. Parrish, M.D., Nashville.)

CONSTITUTION AND BY-LAWS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

1957

CONSTITUTION

ARTICLE I

Name of the Association

The name and the title of this organization shall be "The Tennessee State Medical Association."

ARTICLE II

Purposes of the Association

The purposes of this Association shall be to federate and to bring into one compact organization, through the component societies, the medical profession of the State, and to unite with similar associations in other states to form the American Medical Association.

The aims of this association shall be:

1. The extension of medical knowledge, the advancement of medical science, the maintenance of medical ethics, and the competence of the art of medical practice;

2. The elevation of the standards of medical education.

3. The enforcement of just laws that have to do with the health and welfare of the people of this State.

4. The promotion of friendly intercourse among physicians, and the guarding and fostering of their material interests.

5. The enlightenment and direction of public opinion in regard to the problems of health and medical care, and the promotion of understanding between the public and the medical profession.

6. To make the medical profession of the State more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life.

ARTICLE III

Component Societies

Component Societies shall consist of those local Medical Societies which hold charters from this Association.

ARTICLE IV

Composition of the Association

SECTION 1. This Association shall consist of Active Members, Associate Members, Veteran Members, Honorary Members, and Student Members.

SEC. 2. The Active Members of this Association shall be active members of the Component Medical Societies who have been certified to the Secretary of this Association and whose dues have been paid for the current year.

SEC. 3. Associate members shall be commissioned officers in active service of the U. S. Armed

Forces, Veterans Administration, and Public Health Service, residing in the State, who are elected to membership by a Component Society and certified to the Secretary of the State Association as Associate Members. Such physicians may be eligible for active membership, if otherwise qualified.

SEC. 4. Veteran Members are those who, because of age or impaired health, have been elected Veteran Members of their Component Societies, and who are so certified to the State Association annually by the Component Societies.

SEC. 5. An Honorary Member is one who is a member of another State Association, or other reputable society, who is pre-eminent in general or special scientific work, whose name, with detailed information concerning his education and professional qualification, is presented in writing by three members of this Association, and who is elected by a two-thirds vote of the House of Delegates.

SEC. 6. A Student Member is any student regularly and duly enrolled in a medical school in Tennessee and who is a candidate for the degree of Doctor of Medicine, and who is certified by his Component Medical Society.

ARTICLE V

House of Delegates

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegates elected by the Component Societies; (2) ex-officio the Officers; (3) the five most recent surviving ex-Presidents of the Association, except that all ex-Presidents who are living in April 1956 shall be members for life. (4) the Associations delegates to the American Medical Association, the Commissioner of Public Health, and the Commissioner of Mental Health for the State of Tennessee, provided such Commissioner of Public Health or Mental Health is a member in good standing of the Tennessee State Medical Association.

ARTICLE VI

Sections

The House of Delegates may provide in the By-Laws for a division of the scientific work of the Association into appropriate Sections as the need may arise.

ARTICLE VII

Annual Meetings of the Association

The Association shall hold an Annual Meeting at such time and place as provided in the By-Laws, and the Scientific Meetings shall be open to all registered members and guests.

ARTICLE VIII**Officers**

SECTION 1. The officers of the Association shall be a President, President-Elect, a Vice-President for each of the three grand divisions of the State, a Secretary-Editor, the six elected Trustees, ten Councilors, a Speaker of the House of Delegates, and a vice-speaker of the House of Delegates.

SEC. 2. The Board of Trustees shall consist of the President of the Association, the Speaker of the House of Delegates, the immediate Past-President, the President-Elect, the Secretary-Editor of the Journal, and six members elected by the House of Delegates as hereinafter provided.

Six members of the Board of Trustees shall be elected by the House of Delegates, two from each grand division of the State, and no two will be from any one component society.

The elected Trustees shall serve for a period of three years and no Trustee shall be eligible immediately to succeed himself. The Board of Trustees will organize by the election of a Chairman. The Chairman of the Board of Trustees shall be ex-officio Treasurer of the Association.

SEC. 3. There shall be one Councilor for each Councilor District and such Councilor Districts shall coincide with the Congressional Districts for the State of Tennessee in the year 1948. The Councilors shall be elected for a term of two years, in the following manner: Councilors from odd numbered districts will be elected in even calendar years and Councilors from even numbered districts will be elected in odd calendar years. No Councilor shall serve more than four consecutive years.

The Council shall organize annually by the election of a Chairman and a Secretary.

SEC. 4. The President-Elect, the three Vice-Presidents, the Secretary-Editor and the Speaker of the House of Delegates shall be elected annually for one year, and the Speaker of the House shall hold office for not more than four consecutive years. The President-Elect shall assume office as President at the expiration of the term of the President.

SEC. 5. The President, Secretary, and Speaker of the House of Delegates shall be ex-officio members of the Council.

SEC. 6. Every officer shall hold office until his successor is elected and assumes office.

SEC. 7. All officers of the Association, except the Councilors, shall be elected at the second regular session of the House of Delegates, and they shall assume office when elected.

SEC. 8. No member who has not been a member in good standing for five years next preceding election, or who is not in attendance at the meeting, shall be eligible for election as President-Elect or Vice-President.

ARTICLE IX**The Powers and Duties of the Board of Trustees**

SECTION 1. The Board of Trustees shall have entire control of the publication, the policy and

the editorial and financial management of the Journal of the Association. It shall be authorized and empowered to make all contracts necessary for the conduct of the Journal.

SEC. 2. The Treasurer of this Association shall be the custodian of all the funds of the Association.

SEC. 3. The Board of Trustees shall hold semi-annual meetings, one of which shall be held on the last day of the Annual Meeting, and such other meetings as the business of the Association may require, subject to the call of the Chairman. The Board of Trustees shall make expenditures of the funds of the Association dependent upon the availability of such funds as determined by the Board of Trustees and as ordered by the House of Delegates. The Board of Trustees shall render at the Annual Session a full and detailed accounting of all receipts and disbursements.

SEC. 4. In the event of a vacancy by death or resignation of any member of the Board of Trustees between the Annual Meetings of the Association, the Vice-President for that division of the State in which the vacancy occurs, shall serve as a member of the Board of Trustees until the next annual meeting.

SEC. 5. The Board of Trustees shall be the Executive Board of the Association to determine the policy and details of management between sessions of the House of Delegates.

SEC. 6. The Board of Trustees shall serve without compensation, except the Chairman; who is ex-officio the Treasurer, whose compensation shall be fixed by the House of Delegates; however, their actual expense in attending the meetings of the Board shall be paid out of the funds of the Association. This is not to apply where a meeting is held at the Annual Meeting.

ARTICLE X**Fiscal Year and Dues**

SECTION 1. The fiscal year of the Association shall be from January 1 through December 31.

SEC. 2. The annual dues of Active Members shall be fixed in the By-Laws. No dues shall be paid by Veteran, Associate, Student, or Honorary Members. (Chap. IX, Sec. 1.)

ARTICLE XI**Referendum**

The General Meeting of the Association may, by a two-thirds vote of the members present and voting, order a general referendum upon any question pending before, or already decided by the House of Delegates. The House of Delegates may, by a similar vote of its own members, or after a vote of the general meetings, submit any such question to the membership of the Association for a final vote. If the persons voting shall comprise a majority of all the members registered at that Annual Meeting, a majority of such vote shall determine the question and be binding upon the House of Delegates.

ARTICLE XII**The Seal**

The Association shall have a common seal, with the power to break, change or renew the same at pleasure, by action of the House of Delegates.

ARTICLE XIII**Amendments**

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Delegates registered at the Annual Session; provided that such amendment shall have been presented in open meeting at the previous Annual Session, and that it shall have been sent officially to each component Society at least two months before the Session at which action is to be taken.

BY - LAWS**CHAPTER I****Membership and Sections**

SECTION 1. All Active Members, Associate Members, Veteran Members, Student Members, Honorary Members, and invited guests shall be privileged to attend all scientific meetings and take part in the discussion of all scientific questions, but Active Members and Veteran Members only shall be entitled to vote and hold office.

SEC. 2. A physician whose name is upon a properly certified roster of members, or list of delegates of a chartered component Society, which has paid its annual assessment, or an invited guest, is eligible to register at the annual meeting.

SEC. 3. No person who is under sentence of suspension or expulsion from any component Society of this Association, or whose name has been dropped from its roll of members shall be entitled to any of the rights or benefits of this Association nor shall he be permitted to take any part in any of its proceedings until such time as he has been relieved of such disability.

SEC. 4. Each member in attendance at the Annual Meeting shall enter his name on the registration book or card, indicating the component Society of which he is a member. When his right to membership has been verified, by reference to the roster of his society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that meeting. No Member or Delegate shall take part in any of the proceedings of an Annual Meeting until he has complied with the provisions of this Section.

CHAPTER II**Annual and Special Meetings of the Association**

SECTION 1. The Association shall hold an Annual Meeting beginning on Monday preceding the second Tuesday in April, and at such place as has been fixed at the preceding Annual Session, but it is agreed that the meetings shall rotate annually to Middle, West, and East Tennessee.

The House of Delegates shall meet annually at the place of the Annual Meeting of the Association. It shall meet on Sunday preceding the sec-

ond Tuesday of April and thereafter until its work is completed.

If the business interests of the Association require, it may meet in advance of or remain in session after the final adjournment of the general meeting, such extraordinary sessions being subject to the call of the Speaker of the House of Delegates.

SEC. 2. Special Meetings of either the Association or House of Delegates shall be called by the President at his discretion or upon petition of twenty Delegates.

SEC. 3. If for any valid reason an Annual Meeting cannot be held on date as named, the President, the three Vice-Presidents, the Secretary, and the Board of Trustees may fix another date, provided the Secretaries of component Societies are notified as far in advance of the changed date as possible by the Secretary of the Association and, if time permits, each Member shall be notified by a personal communication mailed to his address.

CHAPTER III**General Meetings**

SECTION 1. The General Meeting shall include all registered Active Members, Associate Members, Veteran Members, Student Members, Honorary Members and guests, all of whom shall have equal rights to participate in the proceedings and discussions. Each General Meeting shall be presided over by the President, or, in his absence or disability, or by his request, by one of the Vice-Presidents. Before it, at such time and place as may have been arranged, shall be delivered the Annual Address of the President and the annual orations; and the entire time of the meeting, so far as possible, shall be devoted to papers and discussions, clinics, and demonstrations, relating to scientific medicine.

SEC. 2. The General Meeting shall have authority to create committees or commissions for scientific investigation of special interest and importance to the profession and public, and to receive and dispose of reports of the same, but any expense in connection therewith must first be authorized by the House of Delegates.

SEC. 3. Except by special vote, the order of exercises, papers, and discussions as set forth in the official program, shall be followed from day to day until it has been completed, and all papers omitted shall be recalled in regular order.

SEC. 4. No address or paper before the Association, except the addresses of the President and invited guests, shall occupy more than twenty minutes in its delivery; and no Member may speak longer than five minutes, nor more than once on the same subject, provided each essayist be allowed five minutes in which to close the discussion.

SEC. 5. All papers read before the Society shall be its own property. Each paper shall be deposited with the Secretary when read.

CHAPTER IV

House of Delegates

SECTION 1. The House of Delegates shall meet annually at the time and place of the Annual Meeting of the Association. It shall meet on the Sunday preceding the second Tuesday of April and thereafter until its work is completed. If the business interests of the Association require, it may meet in advance of or remain in session after the final adjournment of the General Meeting, such extraordinary sessions being subject to the call of the Speaker of the House of Delegates.

SEC. 2. Each component Society shall be entitled to send to the House of Delegates each year one delegate for every fifty active and veteran members and one for every fraction thereof, based upon the number of such members in the component Society in good standing as of December 1 of the year preceding the session of the House. Each component Society holding a charter from the Association, which has made its annual report and paid its assessment as provided in the Constitution and By-Laws, shall be entitled to at least one delegate.

SEC. 3. A majority of the registered Delegates shall constitute a quorum, and all the sessions of the House of Delegates shall be open to Members of the Association.

SEC. 4. From among members of the House of Delegates the Speaker of the House of Delegates, for the purpose of expediting proceedings, shall appoint Reference Committees to which reports and resolutions shall be referred. He shall also appoint a Committee on Credentials and such other committees as may be considered by him to be necessary.

SEC. 5. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, for a period of two years, no two residing in the same grand division of the State, except when more than three delegates are authorized. The Association shall pay the expenses of each Delegate representing the Association at the American Medical Association meetings.

SEC. 6. It shall, upon application, provide and issue charters to component Societies organized to conform to the spirit of this Constitution and By-Laws of the Association, or in the ethics of the American Medical Association, when so recommended by the Councilors.

SEC. 7. In sparsely-settled sections it shall have authority to organize the physicians of two or more counties into one component Society, the name to be chosen by that Society, so as to distinguish them from district and other classes of Societies; and these Societies, when organized and chartered, shall be entitled to all the privileges and representations provided herein for component Societies.

SEC. 8. It shall have authority to appoint special committees for special purposes from its own

membership, or from among members of the Association who are not members of the House of Delegates; and such committeemen shall report to the House of Delegates in person, and may participate in the debate thereon.

CHAPTER V

Election of Officers

SECTION 1. All elections shall be by ballot of the House of Delegates and the majority of the votes cast shall be necessary to elect.

SEC. 2. On the first day of the Annual Session, the Speaker of the House shall appoint three temporary chairmen to preside over the assembled delegates of each of the three grand divisions of the State until a chairman is elected to conduct the procedures of selection of three delegates from each of the three respective divisions, to serve as a committee on nominations, no two of whom shall be from the same component Society. It shall be the duty of this Committee to consult with other members in selecting candidates for the offices, and to hold one or more meetings, at which the best interests of the Association and of the profession of the State for the ensuing year shall be carefully considered. The Committee shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the names of three members for the office of President-Elect all in the same grand division of the state and from which the President-Elect is to be elected, and of one Member for each of the other offices to be filled at the General Session, except the Council. (For list of officers and terms of election, see Article VIII of the Constitution.)

SEC. 3. The Councilors shall be elected on the afternoon of the first day of the Session after their report is made to the House of Delegates, so that they may organize and plan the year's work. The nominations of Councilors may be made by the Nominating Committee.

SEC. 4. The report of the Nominating Committee and the election of officers, except the Councilors, shall be the first order of business of the House of Delegates, after reading of the minutes on the morning of the second day of the General Meeting of the Association.

SEC. 5. Nothing in this Chapter shall be construed to prevent additional nominations being made by members of the House of Delegates.

SEC. 6. In balloting for the nominees for President-Elect, if on the first ballot no one receives a majority of the votes cast, the name receiving the smallest number of votes shall be dropped, and the balloting shall proceed in this manner until an election is had.

CHAPTER VI

Duties of Officers

SECTION 1. The President, or his appointees, shall preside at all meetings of the Association. He shall appoint all members of Committees not otherwise provided for, shall deliver an Annual Address at such time as may be arranged, shall

give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the head of the profession of the State during his term of office, and, as far as practicable, shall visit, by invitation, the various Sections of the State and assist the Councilors in building up the Component Societies and in making their work more practical and useful. The retiring President shall be ex-officio a member of the Board of Trustees for one year.

SEC. 2. The Vice-Presidents shall assist the President in the discharge of his duties, as requested by the President. In the event of his death, resignation, inability to serve, or removal from office, the Vice-President to succeed him shall be from the same Grand Division of the State.

SEC. 3. The Treasurer shall give bond for the trust reposed in him, for such amount as the remaining members of the Board of Trustees may name, said bond to be made by a regular bonding company, and paid for by the Association. He shall demand and receive all funds due the Association, together with bequests and donations. All funds shall be deposited in a National Bank. He shall pay money out of the treasury on bills certified to by the Secretary or Executive Secretary of the Association only; he shall subject his accounts to such examination as the House of Delegates may order; he shall annually render an account of his acts and of the state of the funds in his hands.

SEC. 4. The Secretary-Editor of this Association, as Chairman, acting with the Committee on Scientific Work, shall prepare and issue the programs for and attend the meetings of the Association, and shall keep the minutes, or cause them to be kept, of the proceedings. He shall be Editor-in-Chief of the Journal of the Association and shall discharge such other duties as the Trustees shall specifically direct. His honorarium shall be determined by the Board of Trustees.

SEC. 5. The Board of Trustees shall be empowered to select and remove, without assigning cause, an Executive Secretary. The Executive Secretary may or may not be a member of this Association, and may or may not be a graduate in medicine. He shall be custodian of all records, books, papers, building and property belonging to the Association, except such property belonging to the Secretary-Editor, the Council, the Sections and the various committees, and shall keep account of and promptly turn over to the Treasurer all funds of the Association which may come into his hands; he shall provide for the registration of members and delegates at the Annual Meeting; and upon request, shall transmit a copy of this list to the American Medical Association. Insofar as in his power, he shall use the printed matter, correspondence, and influence of his office to aid the Councilors in the organization of the component Societies and in the extension of the power and influence of this Association. He shall visit

each councilor district at least once a year and oftener, if advisable, and assist the Councilors in organizing unorganized counties, and use every means possible to promote the interests of the Association. Should the Executive Secretary and Councilors deem it wise to organize two or more counties into one society, they shall have the right to take such action and such societies shall be recognized by the State Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall discharge such other duties as the Board of Trustees shall direct. He shall act as business manager of the Journal of the Association, and he shall be the director of all activities in the central office. His salary shall be determined by the Board of Trustees. He shall be required to furnish bond paid for by the Association in the amount designated by the Board of Trustees.

SEC. 6. The Speaker of the House of Delegates shall preside over that body and perform the usual duties of such officer. He shall sign the Minutes of its transactions when same have been read and approved by the House. In the event of his absence for any cause, or upon request of the Speaker, the Vice Speaker of the House of Delegates shall perform those duties. The Speaker shall also be ex-officio member of the Board of Trustees.

SEC. 7. In the absence of the Secretary, the House of Delegates may elect a Temporary Secretary.

SEC. 8. In the event of the death, resignation, disability, or removal of any official of this Association, other than the President, or a member of the Board of Trustees, the vacancy so created shall be filled by the Board of Trustees, and the officer so appointed shall serve until the next regular session of the House of Delegates.

This shall include Delegates and Alternate Delegates to the House of Delegates of the American Medical Association.

CHAPTER VII Council

SECTION 1. The Council shall hold meetings during the Annual Meeting of the Association, and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet after the election of Councilors on the second day of the Annual Session for organization, and for the outlining of work for the ensuing year. At this meeting it shall keep a permanent record of its proceedings. Five Councilors shall constitute a quorum.

SEC. 2. Each Councilor shall be organizer, peacemaker, and censor for his District. He should visit each County in his District at least once a year for the purpose of organizing component Societies where none exist; for inquiring into the condition of the profession, and for improving and increasing the zeal of the component Societies and their members; he shall file with

the Secretary for publication an annual report of his acts and of the condition of the profession of each County in his District to each Annual Session of the House of Delegates. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the Board of Trustees upon a properly itemized statement, but this shall not be construed to include his expense in attending the Annual Meeting of the Association.

SEC. 3. Collectively the Council shall be the Board of Censors of the Association. It shall consider all questions involving the rights and standing of Members, whether in relation to other Members, to component Societies, or to this Association. All questions of an ethical nature brought before the House of Delegates, or the General Meeting, shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of Members, or of a Component Society upon which an appeal is taken from the decision of an individual Councilor. Its decision in all such cases shall be final. It shall make such report or recommendations to the House of Delegates as it deems to the best interest of the Association.

CHAPTER VIII **Committees and Their Duties**

SECTION 1. (a) The Committees of this Association shall be Standing and Special Committees. The Standing Committees shall be as follows:

1. A Committee on Scientific Work.
2. A Committee on Public Policy and Legislation.
3. A Liaison Committee to the Public Health Department.
4. A Committee on Memoirs.
5. An Insurance Committee.
6. A Committee on Post-Graduate Medical Education.
7. A Committee on Cancer.
8. A Committee on Hospitals.
9. A Grievance Committee.
10. A Committee on Physical Therapy.
11. An Advisory Committee to the State Department of Public Welfare.
12. A Public Service Committee.
13. A Rural Health Committee.
14. A Committee on Prepaid Health Insurance.

(b) The members of these standing committees shall be appointed by the Board of Trustees. The terms of service of members of standing committees shall be for a period of one to three years except when otherwise provided in the By-Laws.

The appointments shall be made for such a period of years that the terms of not more than one-third of the members will terminate each year. Each standing committee shall make a report to the House of Delegates at each Annual Session.

(c) Special Committees may be appointed from time to time by the President or the Board of Trustees to carry on special activities.

SEC. 2. The Committee on Scientific Work shall consist of ten members, nine of whom are appointed. The Secretary-Editor shall be a member, and Chairman of the Committee. It is the duty of this Committee to plan and provide the scientific program for each meeting of this Association. Previous to each Annual Meeting it shall prepare and issue a scientific program which shall be adhered to by the Association as nearly as practicable. It shall also be the duty of this Committee actively to assist the Secretary-Editor and those acting as the Editorial Board in preparing the scientific portion of the Journal of the Association.

SEC. 3. The Committee on Public Policy and Legislation shall consist of seven members, five to be appointed by the Board of Trustees, and ex-officio the President and Secretary. Under the direction of the House of Delegates, it shall represent the Association in securing and enforcing legislation in the interest of the public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence in local, state, and national affairs and elections. Its work shall be done with the dignity becoming a great profession, and with that wisdom which shall make effective its power and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such times as may be arranged during the Annual Meeting.

SEC. 4. The Liaison Committee to the State Public Health Department shall consist of five members, to be appointed by the Board of Trustees of the Association and who shall name the Chairman of the Committee for the period of the appointee's term of office. At least one member shall be from each grand division of the State. One member shall be appointed for a period of five years; one for four years; one for three years; one for two years; and one for one year. Thereafter, one member shall be appointed annually for a period of five years.

It shall be the duty of this Committee to confer with the officials of the Department of Health of the State in matters of policy affecting the profession of the State; and it shall be the further duty of this Committee to confer with any member or members of this Association in matters concerning the activities of the Department of Health of the State. Provided, that all matters over which this Committee shall have jurisdiction shall be presented to the Committee, through its Chairman, in writing.

It shall be the duty of the Committee to make a detailed annual report to the House of Delegates of its activities; said report being subject to review by the House of Delegates. In the interval between the annual sessions of the House of Delegates the action of this Committee by a majority vote shall be final.

In the event of a vacancy in the membership

of the Committee for any cause, said vacancy shall be filled by appointment by the Board of Trustees, said appointee assuming the position on the Committee for the unexpired term of the member whom he succeeds. The House of Delegates directs the Liaison Committee to act in an advisory manner to the Public Health Council as now constituted, in the matter of formation of all policies.

SEC. 5. The Committee on Memoirs shall perform such duties as will contribute to the proper recognition of deceased members.

SEC. 6. The Committee on Insurance shall consist of three members, one from East, one from Middle, and one from West Tennessee, to be appointed by the Board of Trustees of the Association. One member shall be appointed for one year, one for two years, and one for three years. Thereafter one member shall be appointed annually for a term of three years. Any vacancy shall be filled for any unexpired term that might occur by the Board of Trustees at any Annual Session.

It shall be the duty of this Committee to attend to all group insurance in which this Association is or may become interested. It shall have power to select insuring companies, accept or reject master policies, arrange premium rates, and act as trustees for this Association in the matter of such group insurance.

All actions of the Committee shall be subject to the approval of the Board of Trustees.

The Chairman of the Committee shall be designated by the Board of Trustees. He shall report to the House of Delegates at each Annual Session upon the activities of the Committee during the preceding year. All necessary expenses of the Committee in the performance of its duties shall be paid by the Treasurer of this Association upon certification of the expenses by the Chairman of the Committee, but this shall not apply to attendance at meetings held at the Annual Meeting.

SEC. 7. The Committee on Postgraduate Medical Education shall have for its duties the promotion of postgraduate medical activities among members of this Association.

The members of the Committee shall be appointed by the Board of Trustees and shall have representation from each Councilor District, from each of the major specialties, and from each participating medical school.

The Chairman shall be appointed by the Board of Trustees.

SEC. 8. The Committee on Cancer shall promote educational activities directed at two objectives: (a) the fullest possible knowledge on the part of the medical profession concerning the recognition of malignancy in its early stages, and (b) the disposition on the part of lay people to consult a well-qualified physician when a condition presents which may be an early malignancy.

SEC. 9. The Committee on Hospitals shall consider all matters relating to the operations of hospitals as the same may affect the medical profession and the public welfare. It shall make

recommendations to the House of Delegates when in its judgment action should be taken on any matter pertaining to the policies enforced in the operation of a hospital.

The principal objective of this Committee is that of preserving a proper relationship between the medical profession and the hospitals in the State. When policies are formulated and enforced by a hospital, which in the opinion of the Committee constitute a violation of the ethical principal which should govern the relationship of a hospital to members of the medical profession and the public, it shall be its duty to bring the matter to the attention of the medical profession and to take such other steps as are deemed necessary and appropriate to correct the practice.

The Committee is charged with the duty of recommending legislation on the subject to the House of Delegates should such a step be considered advisable.

SEC. 10. The Grievance Committee's duties shall be to act as a body to hear any complaints that are registered by patients against any physician at whose hands he thinks he has suffered an injustice. This Committee shall consist of three members—one from each Grand Division of the State. The Committee will be composed of the last three surviving ex-Presidents. The Ex-president which has served on the Committee for the two previous years will serve as Chairman during the third year of his term on the Committee.

SEC. 11. The Committee on Physical Therapy shall cooperate with the Tennessee Chapter of the American Physical Therapy Association, providing such guidance and assistance as will improve the practice of physical therapy in Tennessee; to investigate the standards of this practice and legislation related thereto; and to report its actions and recommendations to each annual session of the House.

SEC. 12. The Advisory Committee to the State Department of Public Welfare shall consist of five members to be appointed by the Board of Trustees for a term of five years, provided, that the first appointments shall be for the following terms: one member for one year; one member for two years; one member for three years; one member for four years; and one member for five years—all subsequent appointments to be for a term of five years.

The Committee shall (1) assist the Department of Public Welfare formulate policies which concern the relationship of the Department to the medical profession; (2) assist in determining disability for public assistance programs of the Department and other medical problems related to public assistance; and (3) advise the commissioner on the medical aspects of other departmental projects or problems.

The Committee, through its Chairman, shall make an annual report of its activities to the House of Delegates.

SEC. 13. The Public Service Committee—This Committee shall be appointed by the Board of

Trustees and shall consist of one representative from each Councilor District and six members from the state-at-large, two members being appointed from each grand division.

It shall be the duty of the Public Service Committee to enlighten and direct public opinion in regard to the problems of health and medical care, and the promotion of understanding between the public and the medical profession.

This Committee shall have a full-time Secretary who will be the Public Service Director and who shall be a member of the Central Office staff. He shall be responsible for the conduct of the activities of the Committee throughout the State and he will assist with the other field services of the Association.

The Public Service Director shall be employed or removed without assignment of cause by the Board of Trustees upon recommendation of the Public Service Committee. His salary shall be determined by the Board of Trustees.

The Public Service Committee shall submit to the Board of Trustees annually a proposed budget.

SEC. 14. Rural Health Committee—The Rural Health Committee shall be appointed by the Board of Trustees. The Chairman shall be appointed by the Board of Trustees.

The duties of the Rural Health Committee shall be to promote the improvement of health standards in rural areas of Tennessee.

SEC. 15. The Prepaid Health Insurance Committee—This Committee shall be composed of such members, lay and medical, as deemed necessary by the Board of Trustees. A chairman shall be designated by the Board of Trustees.

The duties of the Prepaid Health Insurance Committee shall be the perpetual study and investigation of the problems of prepaid health insurance.

CHAPTER IX

Assessments and Expenditures

SECTION 1. Effective January 1, 1951, an assessment of \$25 per capita on the active membership of the component Societies is hereby made the annual dues of Members and subscription to the Journal of this Association; *except new members joining the Association for the first time after July 1 of a given year shall pay \$12.50 for that year only*; provided the component Society does not include in its Honorary Membership any physician residing within the State, and who is not a member of another component Society; and, provided, it includes in its Veteran list only physicians who have been elected by such component Society and the Journal is to be furnished them without cost.

SEC. 2. The Secretary or Treasurer of each component Society shall forward a roster of all Officers, a list of delegates and Members and a list of nonaffiliated physicians of the County if practicable, also a list of Members who have died during the year, to the Executive Secretary of this

Association thirty days in advance of the Annual Meeting.

CHAPTER X

Rules of Conduct

The principles set forth in the Code of Ethics of the American Medical Association shall govern the conduct of Members in their relations to each other and to the public.

CHAPTER XI

The deliberations of this Association shall be governed by parliamentary usage as contained in Robert's "Rules of Order."

CHAPTER XII

Component Societies

SECTION 1. All Component Societies now in affiliation with the State Association, or those that may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, may, upon application to the House of Delegates, receive a charter from and become a component part of this Association.

SEC. 2. Charters shall be issued only upon approval of the House of Delegates, and shall be signed by the President and Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any component Society, whose actions are in conflict with the letter or spirit of this Constitution and By-Laws, or the code of ethics of the American Medical Association upon recommendation of the Council.

SEC. 3. Each component Society shall judge of the qualifications of its own members; but as such Societies are the only portals to this Association, and to the American Medical Association. Every reputable and legally registered physician, who is practicing or who will agree to practice nonsectarian medicine, shall be entitled to membership. Each component Society of this Association may amend its constitution and/or by-laws to provide that the payment of dues to the American Medical Association shall be a condition of active membership in that society. Before a charter is issued to any component Society, full and ample notice and opportunity shall be given to every such physician in the County to become a member.

SEC. 4. Only one component Medical Society shall be chartered in any County. When more than one County Society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the District, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

SEC. 5. Any physician who may feel aggrieved by the action of the Society in his County in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council.

SEC. 6. In hearing appeals, the Council may admit oral or written evidence, as in its judgment

will best and more fairly present the facts, but in the case of every appeal, both as a board and as individual Councilors in district and county work, efforts at conciliation and compromise should precede all such hearings.

SEC. 7. When a Member in good standing in a component Society moves to another County in the State, his name, upon request, and with the consent of his component Society, shall be transferred, without cost, to the roster of the component Society in whose jurisdiction he moves, but he shall not hold membership in more than one component Society.

SEC. 8. A physician living on or near a County line may hold his membership in that County most convenient for him to attend, on permission of the Society in whose jurisdiction he resides, and with consent of his Councilor.

SEC. 9. Each component Society shall have general direction of the affairs of the profession in the County or Counties and its influence shall be constantly exerted for bettering the scientific, moral, and material condition of every physician in the County; and systematic effort shall be made by each member, and by the Society, as a whole, to increase the membership until it embraces every qualified physician in the County.

SEC. 10. Frequent meetings shall be encouraged, and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do postgraduate and original research work and to give the Society the

benefit of such labors. Official position and other preferments should be unstintingly given to such members.

SEC. 11. At some meetings in advance of the Annual Meeting of this Association, each component Society shall elect a Delegate or Delegates to represent it in the House of Delegates of this Association, in the proportion of one Delegate and one alternate to each fifty members or fraction thereof; and the Secretary of the Society shall send a list of such Delegates to the Secretary of this Association at least ten days before the Annual Meeting.

SEC. 12. The Secretary of each component Society shall keep a roster of its members and shall furnish an official report of the membership to the Secretary of this Association at least once each year and oftener if circumstances as to membership may require. The Secretary shall note any changes in the personnel of the membership, with special reference to changes due to death and removal from the district.

CHAPTER XIII Amendments

In order to amend the by-laws of this Association, a two-thirds majority of the members of the House of Delegates present and voting shall be necessary. Such amendment, after having been filed in writing, shall lie over one day. Any by-law may be suspended during the pending meeting by unanimous consent.

EDITORIAL

Cycloplegia and the Optometrist A Question of Malpractice for the M.D.

HOWARD F. HILL, M.D.

RICHARD H. DENNIS, M.D.

It has been brought to our attention that occasionally practicing physicians have been asked to administer cycloplegic medicine for optometrists so that the optometrist may then refract (fit glasses) to children and complicated refraction cases. It is also noted that certain M.D.'s do not know that optometrists are not medically trained and not legally allowed to use or prescribe medicine in any form. They are not doctors of medicine and only use the title of doctor because of state legislative action.

Although this has happened in only a few isolated instances, the dangers involved are considerable.

First, there are cases in which a cycloplegic may be disastrous; namely, in cases of glaucoma in which the patient might become blind. This is especially true of the narrow angle acute type of glaucoma in patients who may never have had a previous attack. This type of eye can only be safely recognized by a well-trained ophthalmologist.

Secondly, malpractice suits against the optometrist would not apply, as he is not a doctor and did not prescribe the drug. The M.D. would bear the brunt of the legal action and rightly so.

Optometrists are not trained to the degree that they can judge the type of case needing cycloplegia and the great majority of them realize this and do not compromise a friendly physician in this way.

Maine Medical Journal
February, 1957

President's Letter

TRY TO KNOW YOUR STATE ASSOCIATION BETTER



J. PAUL BAIRD

such circumstances.

I have heard in times past, expressions of hasty presumption on the part of a Delegate, to the effect that his time was wasted. Listening to apparent endless discussion of lengthy committee reports, prolonged procedures, legislative entanglements, and the detailed work commonly referred to as red tape can be, and is tiresome.

At the beginning of the last session of the House of Delegates, one of my good friends from West Tennessee said to me, "I have had it and I am going back after this meeting and campaign to insure the election of another delegate next year." It is reasonable to assume that many others who have served in this capacity share similar feelings.

But let us consider the record of recent years and give deserving credit to those who in accepting these duties have tried to shorten procedures and remove administrative blocs. Within the past seven years the sessions of the House have been reduced from three, and occasionally four full days, to two half-day sessions. Standing Committees have been reduced to seven-

teen and Special Committees will probably be reduced to this number by the end of the year. Look back over the record and the reports of your Standing Committee Chairmen and review them in the light of service performed in the two to five years prior to your election as a delegate.

As long as your House of Delegates functions as the business, the legislative, and to a large degree the policy making body, you may be sure that it will be a deliberate, conservative organization grinding out the work slowly in accordance with democratic principles of free debate and discussion. The Officers, Board of Trustees, Council and Standing Committee Chairmen welcome suggestions to improve the necessary administrative procedures.

So when you are elected, or re-elected in spite of "campaigning against yourself," to the House of Delegates next year, you have a wonderful opportunity presented. You have the opportunity to study and propose changes which you believe will eliminate red tape and make for improved function of the House. Submit this through proper administrative channels and then be prepared to show cause for the need and defend in debate the resolution involved, remembering that compromise is not an insult to character or intelligence and may at times bring the finest end result.

Think of these things when you think of your House of Delegates.

Paul Baird

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MAY, 1957

EDITORIAL

INNOCENT ALBUMINURIA

There has always been considerable interest directed toward individuals who, although they have albumin in the urine, do not actually have nephritis. Outstanding has been the albuminuria noted in patients who have kidneys in an unstable position and where, presumably because of alterations in circulation through the kidney, albumin appears in the urine. This orthostatic type of albuminuria is usually seen in young asthenic individuals with poor muscle tone and marked evidences of vasomotor instability. The condition does not exist when the individual is recumbent and may disappear as the patient grows older and presumably more stable, and has better tissue tone. No actual kidney disease is present.

The presence of fever usually causes a transient degree of albuminuria. Here cloudy swelling of the renal tubular epi-

thelium occurs only for the duration of the febrile period. Similar alterations of the permeability of the glomerular and tubular epithelium may occur during the course of a decrease of renal blood flow, such as that seen during the course of congestive heart failure or following prolonged periods of hypotension.

More recently another source of innocent albuminuria has been described.¹ Gardner reported observations gathered among 47 members of the University of Pennsylvania football squad. Specimens of urine were obtained from these men after it was determined that their "control" specimens were normal and no history of renal disease existed. Specimens were then examined after days of strenuous practice or actually after participation in an actual contest. Among the 424 urine specimens examined 190, or 44 per cent, showed abnormalities almost identical with those seen in the urine of patients with acute glomerulonephritis, namely, the presence of albumin, red and white blood cells and epithelial cell casts. The magnitude of the urinary findings usually were in direct proportion to the intensity of the physical effort engaged in by the athlete. These findings disappeared completely in about three to five days. There is nothing to suggest that a higher incidence of permanent renal disease appears later in the athletic population.

A knowledge of the relationship of exercise to these changes in the urinary sediment is important, since it is obvious that it might be very easy to misjudge the urinary findings and interpret them in the light of an associated unrelated cold or upper respiratory infection, as indicative of the presence of an acute glomerulonephritis. Gardner emphasizes that if the clinical facts and the laboratory data are not remarkable, and if the urinary abnormalities clear within a week, this is not actually acute glomerulonephritis, but "athletic pseudonephritis."

Physicians should note these facts. Many spend considerable time, usually as part of a "good-citizen" effort in looking after the athletic squads of local community schools.

¹Gardner, K. D., Jr.: Athletic Pseudonephritis—Alteration of Urine Sediment by Athletic Competition, J.A.M.A. 161:1613, 1956.

The chances of an unjustifiable pessimism on the part of the doctor and unnecessary restriction and incapacitation of the athlete may, accordingly, be avoided.

A. W.

DEATHS

Dr. W. Milton Adams, 51, Memphis, plastic surgeon, died on April 4th. He was a past-president of the American Society of Plastic and Reconstructive Surgery, and in 1956 was Chairman of the American Board of Plastic Surgeons.

Dr. Walter Ragland, 90, Mercer, died on April 1 at his home.

Dr. Joseph Jay Baird, 43, Campbell County physician, died March 11th at the Veterans Hospital in Johnson City.

Dr. Charles B. Baughman, 62, Elizabethton, died March 27 in the Veterans Hospital at Mountain Home.

Dr. Joseph H. Smith, 72, Memphis, died on March 29th at his home.

Dr. Albert Arthur Baird, 74, died on April 10 in the LaFollette Community Hospital. His home was in Caryville.

Dr. Charles M. Hamilton, 67, Nashville, died suddenly on April 25, while on a fishing trip on Kentucky Lake. Dr. Hamilton was a past president of the State Medical Association, and at the time of his death was a delegate to the American Medical Association.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis-Shelby County Medical Society

The Society met in regular session with the staff of the U. S. Naval Hospital at Millington on March 5. After the business meeting of the Society, Dr. Harold Boyd, President, presented Capt. Hal Weaver, Commanding Officer of the Naval Hospital, who gave a short address of welcome. The scientific program was presented by the Medical Officers of the Naval Hospital: (1) Appendicitis in the Newborn Infant, by Lt. R. H. Walker, MC, USNR, with discussion by Dr. Russell Patterson; (2) Case Presentation—Appendico-Vesico-Sigmoid Fistula by Capt. L. E. Tebow, MC, USN; Cdr. W. F. Hansen, MC, USN, explained the X-ray findings in this case, discussion by Adm. Morton J. Tendler.

Knoxville Academy of Medicine

The regular monthly meeting was held on April 16. A report from the delegates to the Tennessee State Medical Association was heard. The scientific program consisted of an interesting case report given by W. T. DeSautelle.

The guest speaker was Dr. Harry S. N. Greene, professor of pathology and department chairman, Yale University Medical School. His subject was "Farmer's Daughters and Cancer Research."

Roane County Medical Society

The regular meeting was held on April 30 in the Oak Ridge Hospital. The program consisted of a paper entitled "Health in the 20th Century" by Dr. Lowry H. McDaniel of Tyronza, Arkansas.

Warren County Medical Society

Members of the Warren County Medical Society were given a short history of health department work in Tennessee and a breakdown of the functions of the local health units at the regular meeting on Monday, March 18. The meeting was held in Clara's Restaurant. Dr. R. H. Hutcheson, Commissioner of the State Department of Public Health was the speaker.

Anderson-Campbell County Medical Society

The second annual Doctors' Day in LaFollette was observed on March 28, when the doctors of Anderson and Campbell counties and the Auxiliary of the Medical Society participated in the state-wide Doctors' Day. Doctors of the two counties were honored.

Five-County Medical Society

The annual Doctors' Day observance of the Five County Medical Society was conducted at the Cookeville Golf and Country Club on March 21. Approximately 75 doctors from the area attended. Dr. Jack Moore of Algood presided; the guest speaker was Mr. Gayle Gupton of Nashville.

Chattanooga-Hamilton County Medical Society

At the April 4 meeting of the Society the scientific program consisted of a dis-

cussion on "Hypothermia" with case report. Dr. Augustus McCravey acted as Moderator with Drs. Robert Waters, Frank S. Brannen and John Carter participating on the program. A case report entitled "Septemic Blastomycosis and Bone, Skin and Lung Involvement" was given by Dr. George Sivils.

Nashville Academy of Medicine and Davidson County Medical Society

Members of the Academy were guests of Central State Hospital on April 23. The program consisted of "A Report on Progress of Central State Hospital and What We Hope to Do in the Future" by Dr. O. S. Hauk. A 30-minute tour was conducted for members of the society to the new Intensive Treatment and Receiving building.

Consolidated Medical Assembly

The Society met on April 2 in the New Southern Hotel. Dr. Harwell Wilson, of Memphis, gave a paper on "Intestinal Obstruction in Infants and Children." The discussion was opened by Dr. Baker Hubbard of Jackson. Dr. Fontaine Hill, of Memphis, gave a paper on "Dehydration in Infants: Diagnosis and Treatment." The discussion was opened by Dr. Stanley Crawford of Jackson.

Maury County Medical Society

The Maury County Medical Society held its regular meeting on April 1 and adopted a plan to facilitate the administration of the Salk Poliomyelitis Vaccine to all Maury Countians through the age of 40. The Society announced that it was participating in the program in cooperation with the Tennessee State Medical Association and the American Medical Association.

NATIONAL NEWS

Washington News

By approximately the mid-term point in its first session, the 85th Congress had shown enough interest in health legislation to hold a variety of hearings, but there was no evidence that many bills would be passed before adjournment.

Actually, it was not until three months after the session opened that the Administration sent

up to Congress two bills it regards as important—one would change the doctor draft act and the other would authorize small commercial companies to pool part of their resources to stimulate expansion and experimentation in health insurance.

Even then, the Department of Health, Education, and Welfare had not released its draft of legislation for federal grants to medical, dental and osteopathic schools for construction and equipment. On this, there was some reluctance to act until Capitol Hill had decided on the administration's bill for U. S. aid to general education.

Of all these bills, indications were that progress was assured on only one, that providing some revised arrangement for the selective draft of physicians, dentists and "allied specialists." The special doctor draft act, in effect for almost seven years, is scheduled to expire on July 1. Because Defense Department insists it still needs special authority to draft physicians and other professional health personnel by professional classification, the alternative was continuation of a modified doctor draft act or changing the regular draft act.

Meanwhile, a number of other bills had been studied at hearings. They include:

Changes in medical aspect of civil aviation regulations. Witnesses are widely divided on this measure that would set up an Office of Civil Aviation Medicine within the Civil Aeronautics Administration and give the air Surgeon General who would head the office considerably more authority than now is exercised by U. S. medical officials in this field. There was no official sponsorship of this from the federal governmental level. It was opposed by the Department of Commerce (where CAA is located) and the Civil Aeronautics Board. However, support came from the outside, including testimony from Dr. Jan Tillisch of the Mayo Clinic, Dr. William Ashe, chairman of the department of preventive medicine, Ohio State University, and Dr. Herbert F. Fenwick, president of the Civil Aviation Medical Examiners. Dr. Tillisch headed an AMA ad hoc committee that had started a study of the problem, but he testified as an individual.

Veterans medical care. The House Veterans Affairs Committee had held extensive hearings on a bill to further restrict admission of non-service connected cases to Veterans Administration hospitals, but there were no developments beyond that to encourage sponsors of this legislation.

Civil defense reorganization. Here again a wide split developed at the hearings on just how to reorganize the federal government's participation in civil defense. The Administration wanted to strengthen the U. S. civil defense arm (the Federal Civil Defense Administration), but without going to the extent of making a cabinet-rank Department of Civil Defense, which is the goal of Chairman Chet Holifield (D., Calif.) of the subcommittee that had studied civil defense for more than a year.

Control of barbiturate and amphetamine drugs.

The objective of bills before the House Interstate health subcommittee is to extend federal control to take in the manufacture, compounding, processing, distribution and possession of habit-forming barbiturates and amphetamines. This would be achieved by demonstrating that intrastate control of the drugs is essential to achieve interstate control, a philosophy advanced for years by some federal officials.

While manufacturers, compounders, processors and handlers would have to list their names and places of business with HEW and to maintain complete records, physicians would not have to comply with these regulations. (From the Washington Office of the AMA.)

Jenkins-Keogh Bill

Another piece of national legislation is the renewed Jenkins-Keogh bill. These bills are numbered HR 9 and 10. They have been modified but in general provide for the assigning of part of income, up to a limit, which can be invested in approved methods to build up a retirement program, to be tax free until the funds are drawn upon for retirement purposes, at which time they will be taxable in a reduced amount. The bills proposed to allow self-employed men the same tax exempt formula now being used by industries to establish endowments for its employed persons. This bill now has the support of the American Bar Association, and the American Medical Association.

MEDICAL NEWS IN TENNESSEE

Medicare Forms

This is a reminder that Medicare Forms are available at the Tennessee Hospital Service Association offices in Chattanooga, or any of the area offices in Nashville, Knoxville, Kingsport or Jackson. For greater convenience, most hospitals will be glad to furnish the Medicare forms for use by physicians. Over \$100,000 for Medicare has already been paid since the law went into effect on December 7, 1956. \$50,062.15 has been paid to doctors in Tennessee, with slightly over \$67,000 being paid to hospitals.

Medical Examiner Law Passed

The Davidson County Quarterly Court at its July 15 session, will be asked to implement the local legislation enacted by the Tennessee General Assembly enabling Davidson County to provide for medical examinations in deaths not attended by a physician during the preceding 24 hours.

The Legislature also asked the Tennessee Legislative Council to make a study and recommendations regarding the need for a state-wide medical examiner system.

Medical Services for Rural Areas

The way the medical profession of the State helped mining and other communities of East Tennessee to get adequate medical care and facilities for the first time is described in a book entitled "Medical Services for Rural Areas" recently published by the Commonwealth Fund and the Harvard University press.

The paper bound volume, describing the work of the Tennessee Medical Foundation during the last four years was written by Mr. Willman A. Massie, chairman of the health committee for the Council of the Southern Mountains and formerly field secretary for the Tennessee Medical Foundation. The major project described in the book is that of bringing medical services to Pruden valley, a mining community of about 6000 people in Claiborne County.

The book is of factual interest to every member of TSMA and it can be purchased for \$1.25 from the Tennessee Medical Foundation office in Knoxville.

West Tennessee Cancer Clinic

The Clinic announced the appointment of six Memphis physicians to serve on a medical board for the clinic. The physicians appointed will serve in an advisory capacity and recommend policies to the Board of Directors. The policies involve admission to the clinic, the care of patients and the instruction of residents and undergraduate medical students. The physicians appointed, representing six medical specialties are: Drs. Merlin L. Trumbull, H. K. Turley, Jr., J. Malcolm Aste, J. Cash King, Robert M. Ruch, and Alvin J. Cummins.

Venereal Disease Conference

The 26th annual Venereal Disease Conference was conducted at the University of Tennessee College of Medicine on April 18-20. The postgraduate course was presented through cooperation of the U. S. Public Health Service and sponsored by the University of Tennessee, the Tennessee State Medical Association and Tennessee State

Department of Health. Latest developments in diagnosis, treatment and management of venereal diseases was reviewed by 17 outstanding experts in the field from six states and the City of Washington.

Memphis Eye, Ear, Nose and Throat Conference

The Memphis Society of Ophthalmology and Otolaryngology held its annual Eye, Ear, Nose and Throat Convention in the Peabody Hotel in Memphis on February 9-11. In addition to the guest speakers, there were round-table discussions. The speakers included Dr. Raynold N. Berke of Hackensack, N. J., Dr. Irving H. Leopold of Philadelphia, and Dr. Walter S. Atkinson of Watertown, New York. Dr. James H. Maxwell of Ann Arbor, Mich., Dr. Frank D. Lathrop of Boston and Dr. Victor Goodhill of Los Angeles were also lecturers at the convention.

Blount County Medical Society Symposium

The medical symposium was conducted on March 20th by the Blount County Medical Society and attracted approximately 150 physicians and surgeons from East Tennessee and North Carolina.

Dr. James G. Hughes, professor of pediatrics, University of Tennessee Medical School, Memphis, discussed "Convulsive Disorders in Children." Dr. George J. Thomas, director of the department of anesthesiology, University of Pittsburgh Medical School, talked on "Fire and Explosion Hazards in Hospitals and Their Control." In the afternoon, Dr. Roy T. Parker spoke on "Present Concepts in the Diagnosis and Management of Intraepithelial Carcinoma of the Cervix." Dr. Parker is assistant professor of obstetrics and gynecology at Duke University Medical School, Durham, N. C. Dr. Vernon Knight, associate professor of medicine, Vanderbilt University School of Medicine, Nashville, was the final speaker, his subject being "New Developments in Antimicrobial Therapy."

University of Tennessee College of Medicine

The University of Tennessee Medical Units has completed a \$5,000,000 building program with the completion of the seventh and eighth floors of the Institute of Pathology Building, and the remodeling of the Pharmacy Building with the addition of a fifth floor.

A study by Dr. T. P. Nash, Jr., dean, indicates that medical students of the last decade are better prepared than those during the preceding decade. Fewer failures occurred during the first year of the medical course, the time the majority of students drop out.

From 1936 to 1946, 1,104 students were admitted to the College with an average pre-medical grade for all students of 86.93. For these students the average grade during the first six quarters of the medical course was 79.89. This represents a difference of 7.04 grade points between the premedical school average and the average in medical school. During the period from 1946 to 1956, the premedical school average of 1,660 students was 89.44; the average grade of the same students during the first three quarters of medical school was 83.49. This is a difference of 5.95 in the two grade averages as compared with 7.04 during the decade from 1936 to 1946. During the decade 1936 to 1946, 87 students of 1,104 admitted were not promoted beyond the third quarter, for failure or other reasons. This is 7.8%. Only 40 to 1,660 students admitted from 1946 to 1956 did not progress beyond the third quarter, a failure rate during the first year of the medical course of less than 3 per cent.

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The Division of Preventive Medicine received a \$2,300 Public Health Grant to conduct a pilot study on the epidemiology and immunology of adenovirus infections.

Symposium on Medical and Surgical Emergencies

As part of its Centennial Observance, the Knoxville Academy of Medicine held a Symposium on May 16. The following program was presented:

"Cardiac Emergencies"—By Dr. R. Bruce Logue, Associate Professor of Medicine, Emory University School of Medicine, Emory, Georgia
"Emergencies in the New Born"—Dr. James G. Hughes, Professor of Pediatrics, University of Tennessee School of Medicine, Memphis, Tenn.
"Differential Diagnosis of Coma"—Dr. Edward L. Bortz, Chief, Medical Service, The Lankenau Hospital, Philadelphia, Pennsylvania
"Emergencies of the Third Trimester of Pregnancy"—Dr. M. Edward Davis, Professor of Obstetrics and Gynecology, University of Chicago School of Medicine, Chicago, Illinois
"Panel on Acute Surgical Emergencies of the

Chest, Abdomen, and Head"—Dr. Thomas H. Burford, Professor and Chief of Thoracic Surgery, Washington University School of Medicine, St. Louis; Dr. J. Garrott Allen, Professor of Surgery, University of Chicago School of Medicine, and Dr. Donald D. Matson, Assistant Professor of Surgery, Harvard Medical School, Boston.

Dr. Malcolm Phelps, President, American Academy of General Practice, El Reno, Oklahoma, was the luncheon speaker. The day ended with a Reception.

The West Tennessee Medical and Surgical Association

The annual meeting was held at the Paris Landing Hotel, Paris, on the afternoon and evening of May 9. The program was as follows:

"Some Ocular Manifestations of Systemic Disease"—Dr. William Roberts, Jackson

"Hirsutism in the Female"—Dr. C. R. Webb, Ripley

"Anomalous Conditions in Abdominal Surgery"—Dr. William T. Satterfield, Memphis

"Chemopallidectomy—An Effective Treatment for Parkinsonism"—Dr. A. Roy Tyrer, Memphis
Intermission

"Local Hydrocortisone Injections in the Treatment of Soft Tissue Calcifications"—Dr. J. Kelly Avery, Union City

"The Differential Diagnosis of Pulmonary Tuberculosis."—Dr. Thomas B. Haltom, Nashville

"Pelvic Pain in the Absence of Pelvic Disease"—Dr. Edwin L. Williams, Nashville

The after dinner speaker was Dr. Benjamin H. Robbins, Professor of Anesthesiology, Vanderbilt University, Nashville, his subject: "White Water and Black Magic."

The above program has been approved by the American Academy of General Practice for four hours of Category I credit.

PERSONAL NEWS

Dr. Thomas H. Curtis, Chattanooga, has recently opened his offices in the Doctors Building for the practice of obstetrics and gynecology.

Dr. Mae Porter, Spring City, has accepted a position with the Martin Hospital and Clinic at Pell City, Alabama.

Dr. Maurice Pruitt, Chattanooga, recently addressed the Junior Chamber of Commerce.

Dr. Robert Newman, Knoxville, addressed the District No. 8 Tennessee Nurses Association.

Dr. Raphael E. Bilbrey, Harriman, has been named Health Officer for Roane and Loudon Counties.

Dr. Henry B. Gotten, Memphis, has been re-

elected Chairman of the Civic Research Committee.

Dr. William J. Abel, Meigs County, was recently honored during an observance of Doctor's Day.

Dr. Robert E. Keith began the general practice of medicine with Dr. Warner L. Clark at the Church Hill Clinic on April 1.

Dr. William E. Allison, Nashville, has been named physician for Ford Motor Company Glass Plant.

Dr. Harry E. Stone, Chattanooga, has been certified as a diplomate of the American Board of Surgery.

Dr. Bernard Tepper, Chattanooga, recently spoke on "Arthritis and Rheumatism" on the weekly television program "Your Doctor Speaking."

Dr. Albert E. Easley, Chattanooga, Director of the Tennessee Camp for Diabetic Children, recently addressed the Memphis and Shelby County Medical Society Auxiliary.

Dr. William A. Garrott, Cleveland, recently spoke on the subject of legislation of interest to the medical profession, before the Bradley County Medical Auxiliary.

Dr. R. L. Wilson has moved to Henderson where he will be associated with **Dr. O. M. McCallum** in the practice of medicine.

Dr. James G. McMillan, Jasper, was presented a certificate in appreciation for his services to the Marion County draft board.

Dr. Abner H. Gray, Kenton, has been honored by the community in which he has served.

Dr. Earl Peterson, Erwin, was recently presented a certificate in appreciation for his services to the Unicoi County Selective Service Board.

Dr. P. W. Turrentine, Lenoir City, announces the opening of his office for the general practice of medicine.

Dr. John H. Burkhart, Knoxville, spoke on "Treatment and Prevention of Heart Disease" before the Knoxville Rotary Club.

Dr. D. F. Crowe, Paris, has established his office for the practice of radiology. He will also assume the duties of Radiologist at the Henry County General Hospital.

Dr. Ralph R. Braund, Memphis, was recently honored by the American Cancer Society.

Dr. Chalmer Chastain, Jr., of Cleveland recently attended the postgraduate medical meeting sponsored by the New Orleans Medical Society.

Dr. A. A. McMurray, Clarksville, recently addressed the Civitan Club.

Dr. Harrison H. Shoulders, Nashville, was a recent speaker at the Kiwanis Club.

Dr. R. G. Fish, Paris, recently addressed the District Association of Licensed Practical Nurses.

Dr. Joseph W. Johnson, Jr., Chattanooga, recently appeared on the television program where he discussed the State Mental Health program.

The Tennessee Radiological Society recently elected the following officers: President—**Dr. W. E. Scribner**, Kingsport, Vice-President—**Dr. David S.**

Carroll, Memphis, Secretary-Treasurer—**Dr. George K. Henshall**, Chattanooga. **Dr. Herbert C. Francis**, Nashville, was nominated Counselor to the American College of Radiology for the State of Tennessee and **Dr. Walter Hankins**, Johnson City, was nominated Alternate Counselor.

Dr. David H. Waterman of Knoxville, **Dr. George R. Meneely** of Nashville, **Dr. Raphael N. Paul** of Memphis, **Dr. P. J. Sparer**, Memphis and **Dr. Robert A. Goodwin** of Nashville are to appear on the program of the American College of Chest Physicians at its meeting in New York.

BOOK REVIEW

The Happy Life of a Doctor. By **Roger I. Lee**. 278 pages. Boston: Little Brown and Company, 1956. Price \$4.00.

Roger I. Lee, a graduate of Harvard College and the Harvard Medical School (1905) traces his life through these institutions, his internship at the Massachusetts General Hospital and then into practice in Boston in 1907. He was a student of pathology, and the possessor of an inquisitive mind. In 1913, he became the Professor of Hygiene in Harvard College. In this office he shifted the emphasis to a study of health rather than disease. This career was interrupted by service as head of the medical section of the Harvard Unit in World War I, initially as part of the British Army and later as a consultant to the Third Corps of the United States Army. During this time he advocated and accomplished the removal of K.P. duty as a form of punishment, insisting that kitchen personnel should be trained and supervised.

After the war Dr. Lee returned as Assistant Chief of the medical service at the Massachusetts General Hospital. He also served as the first Dean of the Harvard School of Public Health.

In 1924, he resumed practice, taking great interest in the American Medical Association and the American College of Physicians, being elected to the office of President of both of these large national societies. In 1943 he was elected as a Fellow of the Royal College of Physicians of London. During World War II Dr. Lee served as a member of the National Research Council.

His philosophical consideration of medicine and morals, the doctor in the Army, the problems of practice today improved as they are by antibiotics, insulin, and other agents; the question of fee schedules; the participation of the doctor in his professional societies and in the non-medical community problems, are all flavored with a background of experience and intelligent interpretation.

Those in practice while working in the eerie hours of a cold wintry morning may question the title, "The Happy Life of a Doctor," but one reading this entertaining and interesting life history

of Roger I. Lee must certainly agree that it is indeed a story of the Life of a Happy Doctor.

ALBERT WEINSTEIN, M.D.

ANNOUNCEMENTS

A.M.A. Plans Outstanding Meeting in June

Physicians attending the AMA's 106th Annual Meeting in New York City June 3-7 will find a star-studded revue of exhibits, scientific lectures, medical films and color television programs lined up for their pleasure and enlightenment. Approximately 18,000 physicians from all over the country are expected to participate in this world-famous "short course" in postgraduate medical education. Focal point of the scientific program will be the Coliseum—New York's new exhibition hall—with four floors devoted to technical and scientific exhibits, many of the scientific meetings and the color television program. A number of section meetings plus the scientific film program will be held in hotels near the exhibit hall. Headquarters for the House of Delegates will be the Waldorf Astoria.

An outstanding scientific lecture program is being arranged by the Council on Scientific Assembly. Kicking off the general scientific program on Monday morning, June 3, will be a review of recent progress in surgery while the afternoon session will deal with recent advances in medicine. Tuesday morning's general meeting will feature a discussion on the use and abuse of mood-altering drugs in daily practice.

Formal section meetings will run from Tuesday afternoon through Friday morning. Many of the sections will combine to present special symposiums and panel discussions. The Section on Miscellaneous Topics is arranging sessions on allergy, legal medicine with mock trial involving the testing of drinking drivers, and methods of improving communication in medicine. A number of "exhibit-symposia" and "question-and-answer" conferences also will be held. Special exhibits on fractures, diabetes, perinatal mortality, pulmonary function testing, fresh tissue pathology, arthritis, and nutrition also will be presented.

The color television program presenting live surgical procedures from Roosevelt Hospital will again be sponsored in cooperation with Smith, Kline and French Laboratories.

A foreign air is being added to the regular medical film program for the first time. More than 20 foreign countries are sending special films dealing with many aspects of medical science to the "international medical film program." Both the international and regular film programs will be held at the Barbizon Plaza Hotel.

Registration officially opens at the Coliseum Monday at 8:30 A.M. and closes Friday noon. Advance registrations will be accepted Sunday from 12 noon to 4:00 P.M. The exhibit will be open to "doctors only" on Tuesday and Wednesday mornings to give physicians an opportunity to circulate more freely among the technical and scientific exhibits. For your comfort, the new Coliseum has many facilities, including air conditioning, escalators, elevators, a cafeteria, and snack bars.

American College of Chest Physicians

The American College of Chest Physicians will hold their 23rd annual meeting in New York City May 29-June 2, at the Hotel Commodore.

Upper Cumberland Medical Society

The annual meeting of the Upper Cumberland Medical Society will be at Red Boiling Springs on June 25-26, 1957.

University of Mississippi Symposium on Diarrhea

The University of Mississippi School of Medicine and the Mississippi Academy of General Practice are co-sponsoring a one-day Symposium on Diarrhea on Thursday, June 12, at the University Medical Center in Jackson. There is to be no registration fee, and the A.A.G.P. will allow five hours of Category I credit for attendance.

Schering Releases Arthritis Film

A new 16 mm. color motion picture (25 minutes) on the uses of steroids in the treatment of rheumatoid arthritis has been released for showing to professional groups by the research division of Schering Corporation. The film reviews the chemistry, physiology and clinical application of the new "Meti" steroid hormones in rheumatoid arthritis and other collagen diseases. It presents the most commonly accepted theories of adrenal corticosteroid therapy and reflects the current knowledge of the subject.

PLACEMENT SERVICE

The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 112 Louise Ave., Nashville 5, Tenn.

Locations Wanted

A 24 year old married physician, Presbyterian. Graduate University of Tennessee. Desires general practice until called for military service. Available now. LW-247

A 28 year old married physician, Baptist. Graduate Vanderbilt University. Priority IV. Desires general practice with surgery in Community 2,000-25,000. Would consider any arrangement. Available now. LW-248

A 26 year old single physician, Baptist. Graduate Vanderbilt University. Priority IV. Board eligible in Pediatrics. Desires associate practice in Pediatrics. Available June, 1957. LW-249

A 32 year old married physician, Methodist. Graduate University of Maryland. Priority IV. Desires clinical practice in General Surgery. Available June, 1957. LW-250

A 31 year old married physician, Unitarian. Graduate Chicago Medical School. Priority IV. Three years residency in Internal Medicine. Desires clinical, assistant or associate practice in Internal Medicine. Available July, 1957. LW-252

A 30 year old single physician, Protestant. Graduate University of Louisville. Priority IV. Completing residency in general practice. Desires general practice, clinical or industrial, in community 5,000-50,000. Available August 1, 1957. LW-256

A 31 year old married physician, Church of Christ. Graduate University of Tennessee. Priority IV. Desires private or clinical practice in General Surgery in community of 10,000. Available July, 1957. LW-257

A 29 year old married physician. Graduate Jefferson Medical School. Desires general practice. Available July, 1957. LW-261

A 26 year old married physician, Methodist. Graduate University of Tennessee. Currently on duty as Naval doctor. Prefers general practice in community of 1,000 or more. Available July, 1957. LW-262

A 29 year old married physician, Methodist. Graduate Vanderbilt University. Priority IV. Currently resident in Pediatrics. Desires Clinical, assistant or associate practice in Pediatrics in Nashville vicinity. Available July, 1957. LW-264

A 30 year old married physician. Graduate Temple University. Priority IV. Desires practice in Internal Medicine. Has experience in Cardiology. Desires community of 50,000 to 750,000. Available June, 1957. LW-267

A 28 year old married physician, Presbyterian. Graduate of University of Tennessee. Priority IV. Desires general practice in community with equipment available. Available now. LW-268

A 28 year old married physician, Baptist. Graduate of University of Tennessee. Priority IV. Board Qualified in Pediatrics. Desires practice in Pediatrics in community of 20,000 or more. Available June, 1957. LW-270

A 42 year old married physician, Seventh-Day Adventist. Graduate of College and Medical Evangelist. Priority IV. F.A.C.S. Desires practice in Surgery in community of about 10,000. Available immediately. LW-271

Physicians Wanted

Town with 8-bed hospital in Middle West Tennessee desires physician. Housing, office in hospital and all equipment including X-ray available. PW-66

Town of 1,000 population in West Tennessee desires general practitioner to take over practice of deceased physician. Office space and all equipment are available. PW-73

Graduate, licensed physician desired, on full-time basis, who is oriented in psychiatry, but not necessarily highly trained. The salary can be arranged, and living quarters available on premises. PW-81

Associate Wanted: Young physician with large general practice and fully equipped clinic in north Georgia desires young associate. New well-staffed Hill-Burton hospital in locality. Married man preferred. Personal interview necessary. Position open for July, 1957. PW-83

Small community in South-Central Tennessee desires general practitioner in community with no other doctor. Office equipment is available. Community most willing to cooperate in setting up practice for young physician. PW-85

Physician in South-Central Tennessee community of 7,500 desires associate. Office equipment available. Town has 31 bed hospital. PW-86

Physician leaving to go into Public Health work needs replacement in Northeastern Tennessee town of 800. Equipment is available. Office space adequate. PW-87

Physician selling practice, equipment. All can be financed to fit needs of physician interested in locating in this mid-eastern Tennessee community of 8,000. Excellent opportunity to take over established practice. PW-88

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So frequently the emphasis is on the maternal emergencies, here is a consideration of the circumstances which threaten the fetus.

FETAL EMERGENCIES IN OBSTETRICS*

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The purpose of obstetric care is to have as end products a healthy mother and a healthy newborn. We strive for this goal by providing antepartum, intrapartum, postpartum and neonatal care, being ever alert to the complications that may arise. We attempt to prevent complications when we can, and treat them promptly and actively when prevention fails.

The majority of the major complications of pregnancy are of an emergency nature, and usually when we recognize and treat them, we do so with almost total concern for the welfare of the mother. I would like to consider obstetric emergencies with soul consideration for the developing fetus or newborn.

For the purpose of discussion, I have divided the subject of fetal emergencies into two divisions: (1) the emergencies that arise during the first half of pregnancy when the fetus is never viable; (2) the emergencies that arise during the last half of pregnancy when viability is often present.

Although some of the conditions to be discussed may not appear to be emergencies; from the point of view of the fetus they are.

Emergencies During the First Half of Pregnancy

(1) The first of these is threatened abortion. The chief symptom of threatened abortion is cramping. The chief sign is spotting or frank vaginal bleeding. Either of these two may occur, or both. The character of the bleeding is of some prognostic value. If the initial vaginal discharge is dark brown, we can anticipate that about

60 per cent will eventually abort. However, if the initial vaginal discharge is bright red or pink, about 10 per cent will eventually abort.

On pelvic examination we find uterine enlargement, with or without bleeding from the cervical os, and an absence of cervical dilatation.

An understanding of the pathology of abortion should act as our guide for therapy. Colvin,¹ reporting a series of 1,570 untreated cases of threatened abortion, with a pathologic analysis of the products of conception of those that did abort, found that 69.9 per cent went to term; 2.1 per cent delivered prematurely; 20.3 per cent aborted blighted ova; 3.8 per cent aborted due to pathology of the fetus, placenta, or membranes that was incompatible with further growth and development.

This accounts for 96.1 per cent of the pregnancies, thereby leaving 3.9 per cent that could have been theoretically benefited by specific therapy were it available. The futility of present day specific therapy was further proven by Dieckmann.² We have all read of the efficacy of stilbestrol in the treatment of abortion or in its prevention. He found, in a perfectly controlled series of 1,646 patients, that with the administration of this drug, according to the schedule recommended by the Smiths', the incidence of abortion and prematurity were not altered.

There are several conclusions which can be derived from these large series:

(1) Abortion is an efficient process, employed by nature to maintain a healthy species wherein only the most fit are given the opportunity to struggle for survival.

(2) To this date there is no specific ther-

*Read before the meeting of the Tennessee State Medical Association, April 10, 1957, Nashville, Tenn.

apy for threatened or habitual abortion. Treatment, then, should be rational with these statistics in mind as a guide.

An attempt at prevention would be of some value. The patient, prior to conception, should be in as good a physical and mental condition as it is possible to attain; this status should be insisted upon throughout pregnancy. Patients should be instructed to limit their activity, and to refrain from sexual intercourse and the taking of douches during the time when their first three menstrual periods would have ordinarily occurred. Should they have any bleeding or cramping, these practices should be discontinued altogether. In cases of habitual abortion sexual intercourse and douches should be omitted from the outset of the pregnancy.

When the signs and symptoms of threatened abortion become manifest no therapy is in order, save the above recommendations, unless bleeding becomes excessive, then bed rest may aid in slowing the bleeding. It is an error to incapacitate these patients with prolonged periods of hospitalization, bed rest and expensive therapy that is of no value. The patient should be re-examined at intervals while bleeding to ascertain if abortion has become inevitable or incomplete in order that definitive therapy can be instituted to prevent further blood loss.

(3) Ectopic pregnancy is an emergency wherein the fetal mortality rate is 100 per cent since therapy requires its destruction.

(4) In pregnancy, febrile illnesses pose a definite threat to the developing fetus. The end result is frequently abortion or premature labor. An understanding of the basis for this threat will aid us in treatment. The toxins associated with some diseases, or fever alone, if sufficiently high for a sufficient length of time, may result in fetal death or may initiate uterine contractions. It is also thought that maternal hypoxia resulting from widespread pulmonary disease may stimulate uterine contractions.

Management of these conditions should consist of prevention and therapy. Patients should be instructed to isolate themselves from persons with known communicable diseases. Should the particular disease be contracted, specific therapy, where avail-

able, should be instituted promptly. Special precautions should be taken to prevent excessive fever and hypoxia.

German measles, contracted during pregnancy, presents a specific fetal emergency. If measles occur during the first trimester, the number of congenital anomalies in babies delivered is about three times as high as would ordinarily be present; 20 per cent of the pregnancies terminate in early abortion or stillbirths.

The problem of management should be one of prevention. All girls should be exposed to the disease prior to reaching puberty, since infection almost always produces a lasting immunity. During epidemics, or if there are known cases, patients should isolate themselves and prevent contacts. Should exposure occur gamma globulin may be of some value; however, the use of gamma globulin and convalescent gamma globulin has not proven as effective as once thought. The administration of 0.1 cc. per pound of body weight will prevent measles in 80 per cent of the cases if given within five days of exposure. The most successful technic reported to date is the administration of 20 cc. of gamma globulin that has been obtained from the mixture of three different lots. The number of antibodies present in gamma globulin is variable, and by mixing several lots this is in part overcome.

When German measles occurs during the first trimester of pregnancy, the management of the patient presents a grave decision. The only certain way to prevent an anomalous newborn is to terminate the pregnancy. This is advocated by many. Whether this is proper management is debatable.

In a consideration of the possible outcome of the pregnancy, we have stated that some 6 per cent of the infants can be expected to have anomalies; however, evaluation of large series reveals that 40 per cent of these anomalies are of such nature that habilitation is possible, such as cataracts, deafness, dental defects, and pyloric stenosis. The more catastrophic anomalies, such as mental retardation, microcephaly and congenital heart disease, represent 60 per cent.

Another expression of this, then, would be that 3.6 per cent of the offspring of mothers having developed rubella in the first trimester of pregnancy are apt to have a severe congenital anomaly. Whether this incidence, which is only slightly higher than would ordinarily be expected, is justification for abortion is doubtful.

Each case must be individualized as to what mode of therapy is to be employed. In many cases there is extreme difficulty in being absolutely certain of the diagnosis of rubella which would be necessary before contemplating so-called therapeutic abortion. The following should also be borne in mind before performing therapeutic abortion: if 20 per cent of the pregnancies end in early abortion or in stillbirths, and 6 per cent of live deliveries have anomalies, induced abortion would necessarily result in the destruction of a perfectly normal fetus in 74 per cent of the cases.

(5) Syphilis contracted from the mother by the fetus in utero presents a threat to proper fetal development. To eradicate congenital syphilis we should routinely do serologic tests as early in pregnancy as possible, and to institute specific therapy in all known or suspected cases.

Fetal Emergencies of the Second Half of Pregnancy

When the fetus is viable, emergencies often are frequently more amenable to treatment than those previously discussed.

(1) The first threat to the fetus is that of threatened premature labor. To make this diagnosis there should be no cervical dilatation or effacement. Attempts to prevent labor by bed rest and sedation may be of some value. Morphine is the most effective drug and the quantity given is somewhat higher than used for the relief of pain.

If there is cervical dilatation and effacement, then true labor is imminent. In these cases sedation should be withheld to prevent depression of the mother and the fetus.

(2) Premature rupture of the membranes offers a twofold threat to the fetus:—premature labor and infection. The problem is to make a definite diagnosis, for often the history is unreliable. In the absence of cervical dilatation or effacement, labor may be delayed with bed rest and sedation. Such

patients should be observed closely in order to be immediately aware of the onset of true labor so harmful sedation can be withheld.

Broad spectrum antibiotics should be given to prevent fetal infection when delivery is not imminent.

(3) Premature labor and delivery offers us a challenge that should be met. The rate of premature births is between 6 and 7 per cent of all deliveries, and the fetal mortality rate is in the vicinity of 10 per cent. It is in this field that good obstetric judgment and management offer the biggest opportunity for advancement.

Prevention of this distressing fetal emergency is often possible. In one-third of premature deliveries there is a predisposing maternal factor, such as toxemia, multiple pregnancy where toxemia is more likely than in the usual, abruptio placenta where toxemia is often a factor, and general medical and gynecologic complications. It is imperative that we anticipate, prevent, and treat these conditions as they arise. We should insist that the patient be in good physical condition throughout pregnancy and special emphasis be placed on maintenance of proper weight.

The most preventable cause of prematurity is that which results in the miscalculation of the expected date of confinement in elective cesarean section. About 5 per cent of these infants are premature. To prevent this needless delivery of premature infants, we should take it upon ourselves to obtain consultation in every case, and where there is the slightest doubt as to maturity, labor should be allowed to begin prior to cesarean section to insure fetal maturity.

Once labor has occurred proper management is imperative if we are to give the infant every chance of survival. A brief statement of some of the characteristics of premature infants will outline for us the principles of management in this emergency. Premature infants, during labor, do not tolerate sedatives, hypnotics, or trauma, and after delivery tolerate lowered body temperature poorly. With these tenets as our guide, the salient points in proper management become more obvious.

(A) No sedation should be given during labor. It has been my experience that if a patient is properly briefed as to the reason for withholding pain relieving drugs, the pain of labor is well tolerated. In its place regional analgesia may be employed, if the obstetrician is properly trained in its use.

(B) Regional or local analgesia should be used at the time of delivery, whether vaginal or abdominal, and never barbiturates or inhalation anesthesia.

(C) An episiotomy should be employed in the delivery of all premature infants to reduce cerebral trauma to a minimum.

(D) Proper equipment should be immediately available for care of the premature infant. Of prime importance is some piece of equipment, simple or complicated, that will act as an incubator to maintain the body temperature so vital to the premature newborn. This should be present at all multiple births, since 50 per cent of these can be expected to be premature.

(4) Intra-uterine hypoxia or anoxia is a threat and an emergency to the fetus. The complications that bring this about are varied.

(A) Ruptured uterus is an emergency wherein fetal salvage is in direct proportion to the rapidity in which the diagnosis is made and delivery accomplished. We should be alert for this possible complication in every patient in labor. Patients that have had previous cesarean sections should be warned of the symptoms of this catastrophe, and that it may occur at any time during the last half of pregnancy, so the patient may seek attention early should symptoms occur.

The only hope for survival of the infant is immediate delivery by the most rapid method possible.

(B) Prolapse of the umbilical cord represents a most serious fetal emergency, and here our only concern is for the welfare of the fetus. Prolapse of the cord occurs four times more often in premature than at term births. It is twice as frequent in the multipara as in the primigravida. In one study it was found that it occurred in one of every four cases followed artificial rupture of the membranes. It is a frequent complication of multiple pregnancy and transverse

presentation. In some instances, prevention will negate the necessity for therapy. We can certainly eliminate 25 per cent of the cases by following a time honored obstetric rule: Do not rupture the membranes until the presenting part is well engaged.

We must be ever alert to this emergency if we are to save the fetus, since prompt diagnosis and delivery is imperative. The diagnosis is often made when the cord appears at the vaginal introitus. It is sometimes made by palpation during vaginal examination. It is recommended that immediate vaginal examination be done after spontaneous rupture of the membranes has occurred to ascertain the presence of a prolapsed cord.

When the diagnosis is made, one hand should be immediately placed in the vagina, if not already present, and steady, firm pressure exerted on the presenting part to prevent compression of the cord. This maneuver is facilitated by placing the patient in exaggerated Trendelenburg position. Oxygen should be administered to the mother throughout. A constant check of the fetal heart tones and pulsation in the cord should be maintained.

At this time the situation should be evaluated and a conclusion reached as to the most rapid means of delivery. If conditions are such that vaginal delivery can be accomplished very rapidly, this method can be utilized. If this is not the case, immediate cesarean section should be done. During the operation, the examiner should at all times prevent compression of the cord as previously outlined. Immediate delivery is the only satisfactory method of treatment. Attempts to reposit the cord almost invariably end in fetal death.

(C) Placenta previa is a fetal emergency that often results in fetal hypoxia of two-fold origin. There may have been sufficient maternal blood loss to so lower the maternal oxygen carrying capacity that fetal distress results. Further, placenta previa, with bleeding, indicates a degree of placental separation which necessarily results in fetal embarrassment. This is frequently compounded by prematurity. All too often in placenta previa little or no consideration is given to the fetus. A few

simple measures may enhance the fetal salvage rate.

(a) Oxygen should be administered to the mother while the mode of therapy is being planned and during the delay while preparing to execute the chosen treatment.

(b) Rapid replacement of blood loss to the mother is imperative.

(c) In cases of doubtful or borderline viability, definitive therapy, that is delivery, can sometimes be delayed for weeks. Here a calculated risk is involved; however, for the immature fetus it is justifiable. The patient should be kept under close surveillance during this time. Blood should be kept available at all times. The length of time one can delay delivery is in direct proportion to the amount of maternal bleeding that occurs.

(d) If cesarean section is employed to terminate the pregnancy, the fetal survival is enhanced if the procedure is done under local analgesia. This is particularly true in the face of prematurity.

(D) Abruptio placenta is an emergency that results in fetal hypoxia or anoxia, which is similarly twofold in origin. An effort to prevent predisposing causes is of some value. Though the relationship of toxemia to premature separation of the placenta is not as high as was formerly believed, an occasional case of abruptio placenta could be prevented by strict prenatal care and the prevention of toxemia. Abruptio placenta may follow trauma to the abdomen, either intentional or accidental, as in collisions or falls. Patients should be warned of their decreased agility during pregnancy and any such trauma should be evaluated for the possibility of abruptio.

The treatment of abruptio placenta varies according to its severity. The classification as outlined by Page³ is a useful guide.

Grade I. External bleeding only, or mild uterine tetany in the absence of maternal shock. In these cases oxygen should be given the mother, blood loss replaced, and if near term, the membranes ruptured, and labor induced. During labor the patient should be constantly observed for any progression of the already present separation. If the fetus is not near term labor should not be

induced. The patient should be observed for any progression of the separation.

Grade II. The patients in this group have uterine tetany, with uterine tenderness, with or without external bleeding, evidence of fetal distress, but not death. In these cases, before fetal death has occurred, the membranes should be ruptured, oxygen should be given, and blood replaced. Cesarean section should be done immediately after the patient is stabilized, unless vaginal delivery can be anticipated within a reasonable length of time. In cases of prematurity, the operation should be done under local analgesia until delivery.

Grade III. Fetal death has occurred.

(E) Erythroblastosis fetalis is a fetal emergency that, for the most part, can be adequately managed with present day techniques.

Fetal salvage can be enhanced only if we recognize those patients in whom the possibility of fetal damage may occur. Routinely all pregnant women should have a determination for the Rh factor. The husbands of the Rh negative patient should be checked, and those that are found to be negative can be eliminated from the group requiring special attention. The obstetric history should ascertain whether the Rh negative mother has ever been transfused since this may result in isoimmunization and erythroblastosis. The Rh negative woman should be followed during pregnancy with antibody titer determinations, though this is of uncertain value in anticipating erythroblastosis.

At delivery, a sample of cord blood should be obtained for a Coombs test, determination of the Rh factor, bilirubin and hemoglobin.

In the presence of a negative Coombs test or Rh negative cord blood, the possibility of erythroblastosis is of no concern. If the Coombs test is positive and evidence of red blood cell destruction is present to a significant degree, exchange transfusion should be done immediately. If destruction of cells is absent, these babies should be followed with hemoglobin and bilirubin determinations at frequent intervals so that any delayed red cell destruction can be appreciated

in order that exchange transfusion may be carried out without delay.

(F) The last emergency to be discussed is that of apnea following delivery. Many times the cause can be determined such as excessive sedation during labor and delivery which is to be condemned. Every obstetrician must have as a part of his armamentarium a proven technic for infant resuscitation. The simplest and most effective technic is intratracheal catheterization by palpation, and the cleansing of the tracheo-bronchial tree and provision of artificial respiration through the catheter. The use of respiratory and cardiac stimulants should never be used in the newborn under any circumstances.

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Discussion

DR. ROY A. DOUGLASS, JR. (Jackson): I am honored to have the privilege of discussing this fine paper by Dr. Williamson. He has presented a topic which is of vital importance and yet is infrequently seen in the literature or in discussions. Most papers on similar subjects are related to difficulties and emergencies which are encountered insofar as the mother is concerned. It is very stimulating and interesting to have a presentation from the fetal standpoint.

Fortunately, in obstetrics most cases are uncomplicated. Since our field was begun by midwives, some of our colleagues seem to think that is all we are today. One of my surgical colleagues likes to joke that obstetrics is holding a towel at the vagina and catching the baby as it comes out. While this is true in a large percentage of cases, emergencies can arise, and when they do occur they immediately require all the knowledge and skill which we possess to save the lives and health of our patients. There will not be time in this discussion to cover all the topics, though they were interesting, which Dr. Williamson has presented. Instead I would like to merely select a few topics for additional comments.

Dr. Williamson's remarks concerning German measles were very interesting but I would like to go one step further. He says it is debatable whether therapeutic abortion is indicated when

the expectant mother has German measles during the first trimester of pregnancy. As far as I am concerned therapeutic abortion is definitely not indicated in this situation. Dr. Williamson reports up to 6 per cent of fetal anomalies in this situation. Other reports vary up to 60 per cent. Regardless of the percentage, I do not think it is fair to risk killing a perfectly normal child to save a smaller number of defective ones. Last year in our community we had an epidemic of German measles, and 6 of our expectant mothers, to our knowledge, contracted German measles during the first trimester of pregnancy. Of these 6, two had defective infants with cataracts and congenital heart lesions. The other 4 were perfectly normal. I do not believe it would have been correct on a medical, moral or religious basis to have killed the 4 normal infants in order to save the 2 defective ones.

Dr. Williamson's comments concerning premature labor and its management indicate that he is well versed in medical literature but not so well versed in reading the popular magazines of the day. Had he been keeping up with the *Saturday Evening Post* in recent weeks, he would have known that there is a preparation, an ovarian hormone extract, called "releasin," which is so effective that all you have to do is give it to the women in premature labor and it will save them all. While "releasin" may be of some benefit and future experimental work may show that it will help to some degree, I would be forced to agree with Dr. Williamson that for the present day therapy, bed rest, mild sedation and hoping is the only help that we can offer patients who are threatening to go into premature labor.

Dr. Williamson has very correctly emphasized a minimal amount of sedation for delivery of premature infants and the use of regional anesthesia and deep episiotomy. I would like also to add as well that I use spinal anesthesia for all my cesarean section where the infant is premature. However, I think we can go further than this, using it in every case and particularly using it in any situation where there is already some fetal distress. Should fetal distress be present, regardless of the size of the baby, the addition of a general anesthetic and its depressant action on the fetus might change it to one that cannot be resuscitated after delivery.

A good discussant should always disagree with the author of the paper, otherwise he does not contribute anything to the presentation. We all have differences of opinion,—that is what makes our medical field so interesting,—and I would like to disagree with Dr. Williamson on one aspect, namely, the management of abruptio placentae. He states, and I quote, "Grade I—external bleeding only or mild uterine tetany in the absence of maternal shock." Later on he states that if the patient is not near term he does not induce labor. I say that all these patients should be delivered immediately or within a few hours. Here I must caution that one must distinguish the bleeding

from that which is due to a ruptured marginal sinus, to a cervical lesion or to no cause at all. Simply, the patient in the last trimester of pregnancy who has vaginal bleeding and who does not have a placenta praevia, as determined per vaginal examination, does not necessarily have a separation of the placenta. These other factors must be considered, but if one definitely diagnoses a separation of the placenta, I believe the woman should be delivered either vaginally or by cesarean section, whichever one is best for the given situation. I have two reasons for this. One, of course, is maternal. If definite separation is present, one invites more hemorrhage, more separation, and the possibility of afibrinogenemia is also present. Another reason is fetal. I think at any time, regardless of the maturity of the child, if a definite separation of the placenta has occurred and the fetal heart beat is still present, the child's chances for survival are better outside the uterus than inside. If one waits for further signs of progression of separation, one may wait until the fetus has gotten enough embarrassment that its life will be lost.

Lastly, I would like to heartily endorse Dr. Wil-

liamson's recommendations concerning resuscitation. Institution of an airway by manually inserting a catheter or laryngoscope is necessary. Aspiration of the trachea through this catheter and then artificial respiration by positive pressure breathing through the catheter will be very beneficial in picking up the heart tones, preventing anoxia, and in keeping a good blood supply to the brain until the infant picks up respiration on its own accord. I do not use machines such as Bloxum Airlock, Heidbrink Resuscitators or other artificial means as I do not think they are effective. The catheter can be easily inserted manually. Anyone can learn to do this by practicing on a stillborn infant and positive pressure breathing after aspiration will be very effective in resuscitating a large percentage of infants. True, if we have any microscopic organisms in our throat, the infant will also get the same organisms, but that infection can easily be controlled by the use of antibiotics.

I would like to thank you again for your time, for listening, and for the opportunity of discussing this excellent paper by Dr. Williamson.

**Partial Synovectomy and Curettage in the Treatment of Tuberculosis of the Hip. M. C. Wilkin-
son: J. Bone & Joint Surg., 39-B:66, 1957.**

A series of 39 patients with tuberculosis of the hip is presented, all of which were treated by constitutional treatment, antibiotics and intra-articular operation. The operation varied from a simple arthrotomy to partial synovectomy with curettage of bone foci. The patients were selected in so far as none had suffered complete destruction of the joint space.

In this series, function was restored in 31 hips while 8 hips required stabilization operation.

The author noted that following the operation, the patient's general condition improved. The sedimentation rate became normal and there was marked local improvement in the affected joint. Edema and spasm diminished and even associated lesions, such as pulmonary foci, improved. An interesting late sequelae was the development of coxa magna, consisting of a general enlargement of the femoral head and neck which the author attributes to an increase in the blood supply. The author concludes that joint function may be preserved by the combination of antibiotic and operative treatment and feels that intra-articular operation should be performed when the hip disease is not resolving. (Abstracted by Thomas F. Parrish, M.D., Nashville.)

The periodic examination is becoming of increasing importance in an attempt to prevent either the appearance or progression of degenerative and chronic disease. Here is preventive medicine at its best in the adult.

THE PERIODIC MEDICAL EXAMINATION*

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The practice of medicine has changed markedly in the past 25 years. This is due not only to the fact that we view things differently because of our broader medical knowledge, but also because much of the practice of medicine has been altered through the application of this knowledge. The infectious diseases required much of the effort of the physician in the past, with pneumonia taking 30 per cent of its subjects, typhoid fever wiping out entire communities, pertussis and diphtheria decimating our infant population.

One can visualize the war between medicine and disease made up of many vigorous battles with high morbidity and mortality figures. Man was on the defensive, being able to do little more than fight the *fully developed* disease when it presented itself.

Water purification, sewerage disposal, swamp drainage, active immunization for smallpox, pertussis, diphtheria, typhoid fever, and the progressive rise in number and efficiency of the antibiotics has placed us now in the offensive rather than the defensive position. Numerous infectious diseases are now readily handled, children grow to be adults, 15 million adults grow past the age of 65 years. One can say that the vicious battle with acute infections has been quieted and that we now are fighting the cold war of the degenerative and chronic diseases.

This group of diseases, at the present state of our knowledge, is subject to correction only if detected early or prevented. This then becomes the basic reason for the periodic health examination. There has been considerable discussion within the pro-

fession concerning the promotion of such an examination for all people. Industry¹ has felt such a procedure wise and has required an annual examination of its leading personnel for a number of years. Would such a procedure be warranted for the general population? Would there be sufficient medical personnel to conduct it? Would an effective periodic examination be acceptable economically and otherwise to the patient? What could we expect to accomplish by this examination? How often should it be conducted? What should make up the examination? These and a number of other questions come to mind before assigning approximately 160,000 busy physicians 160 million annual examinations to do besides their present volume of work. If we consider all practicing physicians as taking part, this will be approximately 1,000 examinations each year or 3 per day per physician. Such an addition to the day's schedule seems heavy considering the extent of the examination until one reflects on the advisability of making it an extension of many other examinations routinely occupying one's office and hospital appointments. It seems reasonable to assume that such additional work could be absorbed effectively. This, however, would have to be determined by each physician in relation to the manner of conducting his particular practice.

For the past four years the University of Pennsylvania Diagnostic Clinic¹ has conducted a periodic health examination program on 750 individuals on an annual or biannual basis. These individuals, 97 per cent of whom were men, were from various business concerns and largely held executive positions. Thirty-five per cent of the individuals examined presented new disease previously not known to be present, and 70 per cent of these required treatment. Eighty-five per cent of the cardiovascular

*Read before the meeting of the Tennessee State Medical Association, April 8, 1957, Nashville, Tenn.

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diagnoses in this group were essential hypertension. The most frequent gastrointestinal disease found was the asymptomatic adenomatous polyp.

Five malignancies were found in these 750 individuals, including carcinoma of the rectum, carcinoma of a rectal polyp, carcinoma of the stomach, bronchus and skin. Nineteen individuals had inguinal hernias. Eighteen had diabetes, 3 requiring insulin therapy, the remaining 15 being managed by diet. It is interesting to note that in only slightly over 30 per cent of these newly discovered diseases were there any symptoms present attributable to the disease. Certainly these reports are a strong recommendation for a periodic health examination.

History Examination

The history examination is one of the most important parts of any complete examination. It takes a well-trained and skillful historian to be able to guide the patient in such a manner that an accurate and reasonably complete history is obtained in a reasonable length of time. This is where the well-trained clinical mind rediscovers incidents in the patient's life that lead him to intelligently direct his physical examination and laboratory requests. The physician must show a persistent interest in the history without showing any alarm, disgust or amusement at what the patient may reveal. Properly encouraged, the patient enjoys talking about himself and particularly about his present illness. The past history may be very helpful in evaluating the significant data on the annual examination, and the physician will do well to keep the patient interested and accurate in relating this information.

No examination is complete without at least a brief psychiatric evaluation of the patient. This may take but a few moments of extra attention to the personality and general attitude. This part of the examination may be conducted quite successfully during the taking of the history and at the conclusion of the usual history examination. It must be remembered, however, that this type of evaluation of the patient can be made throughout the doing of a physical

examination and laboratory tests. The patient's response to various procedures done on him give us some insight into his personality.

One should make note of the behavior and reaction of the patient to his environment. It is well to note the manner of talk in conversation. Does it seem to be under pressure, hurried, hesitant, relaxed, confused, disjointed, rational or irrational. Does his speech seem to have an anxious tone? Is it loud or soft? Does the patient appear restless or fidgety, or adjusted to his environment? Are his hands quiet or are they in constant motion in doing something? Are his feet still or are they in constant movement about the floor or are his legs being repeatedly crossed and re-crossed? Do his emotions give an appropriate or inappropriate affect in relation to the interview? Does he laugh at things that are not amusing or does he act sad without apparent reason. Is he oriented or disoriented as to time and place?

With properly directed intent and care, one can get a fair assessment of the personality of his patient. Further interviews may be necessary but alertness for abnormalities in these areas can give a great deal of information when looked for throughout the history and physical examination.

With the increase in automobile traffic and the frequency of fatal accidents it probably will not be too long before the family physician will be required to sign a health certificate before his patient is eligible for a driver's license. This, no doubt, will require a psychiatric evaluation of the patient. How many paranoid and psychopathic persons, or just acutely or chronically anxious patients are behind steering wheels with a heavy foot on the accelerator today? How many can give us a history of failing eyesight, loss of muscle coordination, or other physical conditions which they refuse to acknowledge openly, but which have occurred since their last driver's examination and which certainly makes driving hazardous?

Physical Examination

The physical examination of the patient should be as thorough as is possible. The patient should be completely stripped so

that all surfaces of the body are easily accessible. This is important when one considers that 15.4 per cent of all cancers in men is found in the skin. A complete examination of the skin under a good light can be quite helpful in finding evidence of systemic disease calling for more than the routine laboratory examinations for confirmation. Anemia, metabolic diseases, allergies and dermatoses will be found if looked for. The routine physical examination done in a systematic manner can be quickly performed and any abnormalities noted.

The physical examination is not complete without noting the posture of the patient as well as his gait.

A digital rectal examination should be done, for by this examination alone more than 50 per cent of the cancers of the large bowel can be palpated. It is recommended that the examination include a sigmoidoscopy so that the rectosigmoid and lower segments of the sigmoid colon can be viewed directly. With this added examination, 70 per cent of the neoplastic growths of the large bowel can be diagnosed. If the patient has not been previously advised to take a couple of ounces of castor oil the night before and an enema the morning of the examination, an enema containing phospho-soda can be given in the office with good results. The sigmoidoscopy is not a painful procedure and no sedative is necessary. It should be preceded by a digital examination so that any feces fissure or thrombotic hemorrhoids will be detected before inserting the scope. The patient may be placed on any examining table in the knee-chest position. This is a most satisfactory position and tends to open the bowel as the scope progresses. Very little air is needed, but the scope should not be advanced unless there is visible bowel lumen ahead. After getting beyond the rectal sphincter, the scope should be inserted only under direct vision and great care should be taken not to impinge the bowel against the bony rim of the pelvis. If the procedure is done slowly and carefully it is not difficult to insert the scope for its full length without having the patient complain.

The physical examination most certainly

must include a pelvic examination both bimanual and by direct inspection. It is at this time that the Papanicolaou smear is taken. In examining women, it is well for the examiner to very carefully examine the breast bilaterally, by both careful inspection and palpation. It has been estimated that 21.7 per cent of all cancer in women is in the breast. A little extra time can be spent in showing the patient how to examine herself for breast changes. The breasts should be inspected carefully from above, from in front and from the side, so that any change in contour will be noted. Each breast should be individually examined with the flat of the hand, with the patient lying down, so that the full benefit of the firmness of the chest wall is available. Then the breast tissue is very carefully palpated and the nipple examined and stripped for discharge.

Laboratory Work

The laboratory studies recommended for an annual health examination probably finds less agreement among physicians than any other portion of the examination. It is my feeling that it must be basic and as minimal as is possible. Additional tests should be made if the history or physical examinations suggest them. To suggest a battery of laboratory tests that would include the majority of recommendations would no doubt lead to prohibitive fees and discourage the institution of a routine annual examination.

A complete urinalysis is certainly indicated and should include the appearance, specific gravity, pH, protein, sugar, and microscopic elements. Additional tests for bile pigments, acetone, etc., may be done if the history and physical examination suggest it.

The examination of the blood may be limited to the hematocrit, which should be done routinely. This is more accurate than the hemoglobin and readily done. Some suggest that in addition a blood smear should be made and a differential white count taken. We leave this to be suggested by the history and physical examination but admit that we are quick to use it on rather broad indications.

An additional test of value, particularly if your patient has been properly prepared, is a test for occult blood in the stool. The quaiac test is quite satisfactory. This can be done following the digital rectal examination with material taken from the examining finger, or material taken through the sigmoidoscope.

There is little justification for not including a Papanicolaou vaginal smear annually on all female patients. The material for examination is easy to obtain, and most pathologists are equipped to evaluate the slide.

Sprunt² and his group, on an extensive screening examination of 108,000 women by the Papanicolaou smear technic, diagnosed 786 cases of invasive cancer and intra-epithelial carcinoma (carcinoma in situ). Fifty-nine per cent of the entire group were previously unsuspected; 90 per cent of the intra-epithelial carcinomas and 30 per cent of the invasive cancer cases were previously unsuspected. This demonstrates the value of this test being included in the annual examination.

A chest X-ray should be made annually on all adult patients, particularly in the light of the newer drugs permitting us to effectively treat early tuberculosis. The increased prevalence of lung cancer also dictates inclusion of this examination, especially in patients who have been heavy cigarette users. Over 74 per cent of lung cancer³ is not diagnosed until after metastasis has occurred.

A routine electrocardiogram on all patients coming for a periodic examination does not seem warranted. Certainly when the history or physical examinations suggest cardiac disease, an electrocardiogram should be made, but only under such circumstances should this added expense be invoked.

Summary

The increase in degenerative and chronic diseases, establishing cardiovascular disease and cancer as the two leading causes of disability and death in our population as contrasted to infections in previous decades, certainly seems to dictate that the annual medical examination be more widely em-

ployed as a preventive and therapeutic means for controlling this facet of our general health problems.

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Discussion

DR. OGLE JONES, Centerville, Tenn.: I am sure we all agree that the procedures recommended by Dr. Davison in his very fine paper should be carried out. I could not find any figures on, or estimates of the number of doctors per thousand who routinely obtain complete histories and who do detailed physical examinations on all their patients. There was very little in the medical literature that would lead one to think that the medical profession was making a concerted effort to teach the public the importance of regular check-ups. I was also unable to find any data on how frequently patients come in for regular physical examinations or what per cent returned for a yearly check-up. Since I was unable to get the statistics I wanted to use in discussing Dr. Davison's paper from some other than my own records, I hope you will pardon me for analyzing records from my files.

One hundred charts were selected at random by my secretary. The only stipulation I made was that the charts selected be on patients whom I had seen two or more times. The reason for this was that I see a large number having minor injuries who come in to be treated one time and then return to work.

From my records, I found that 85 histories had been obtained which included chief complaints, present illnesses and past histories. The family histories were no good and no mention was made of psychopathic personalities. Eighty-five physical examinations were made and each contained remarks about the posture, skin, weight, age, race, sex, head, neck, eye, ear, nose and throat (two cancers of the mouth were found), general glandular enlargement, thorax (three cancers of the breast were discovered), heart and blood vessels (blood pressures in 10 were found to be above 200), abdomen, extremities (more disease was found of the feet and legs than any other part of the body), reflexes, pelvis and believe it or not rectal examinations sufficiently detailed to find two cancers.

Supplementing the history and physical examinations, but not all done at the first visit, were 83 urine examinations (3 diabetics were found),

6 V.D.R.L. tests (4 positive), 75 X-ray examinations (3 tuberculous infections and one cancer of the lung found, and 4 ulcers of the GI tract), 80 complete blood examinations, 40 combination pap smears and biopsies (4 positive), 28 E.K.G.'s (2 showed old infarcted areas), 31 immunizations, 41 typed and RH factors determined. Eighty-two patients, and this was a pleasant surprise to me, returned one or more times each year for check-ups. Thirty-two B.M.R.'s and 16 sensitivity his-

tories were obtained. No cholesterol determinations showed up in this group, but I believe they should be done when indicated.

Before you saw the limb off behind me, so to speak, by criticism and before you forget most of Dr. Davison's recommendations, make an evaluation of some of your charts and see if you do not agree with Dr. Davison that most of us can do a better selling job on ourselves and on the public for complete yearly examinations.

High Anterior Myocardial Infarction, XX. Studies on the Mechanism of Ventricular Activity. Myron Prinzmetal, Rexford Kennamer and Rashid A. Massumi, *Circulation*, 15:575, 1957.

The standard 12 lead electrocardiogram explores most but not all of the heart surface. When a myocardial infarction does not invade the areas explored by these leads, the Q wave, ST elevation and T inversion characteristic of infarction do not appear but changes attributable only to ischemia are seen.

The authors studied this problem with multiple lead electrocardiograms. In addition to the 12 standard leads 85 to 105 other leads were taken at points on the anterior thorax standardized by means of grid lines oriented by bony land marks. Normal patterns for the extra leads were established in 106 controls without history or evidence of heart disease then 149 patients with various manifestations of coronary artery disease were studied.

Sixty-six of the 149 had myocardial infarctions. In 6 of the 66 the 12 standard leads showed only changes of "myocardial ischemia" but the diagnosis of a high anterior infarction was established by high sternal leads which showed characteristic QRS, ST and T complex changes. In all six QS waves, ST elevation and T inversion developed in the acute stage. After recovery R waves returned and ST segments and T waves became normal.

The two high sternal leads which proved most useful and reliable were: V 2 at the level of the second intercostal space and a mid line V lead at the level of the third intercostal space. In the 106 normals an R wave was present in these leads in over 98% and a Q or QS wave with suggestive clinical symptoms was considered diagnostic of high anterior myocardial infarction. S-T segment elevations up to 1.5 mm. and T wave inversion were common in these leads in normal individuals but greater S-T elevations or observation of T wave inversion in serial electrocardiograms were considered significant.

The use of these two high sternal leads in questionable cases was advised. (Abstracted for the Middle Tennessee Heart Association by Clarence Woodcock, M.D., Nashville.)

Much work still needs to be done on the relationship of lipids to atherosclerosis and coronary disease. Yet certain circumstantial evidence has accumulated which makes its use in treatment not as irrational as was once thought.

FACTORS CONTRIBUTING TO EARLY CORONARY DISEASE*

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Since the turn of the century the average life expectancy in this country has increased by approximately twenty years. This advance is due essentially to the development of measures which are highly effective in the prevention and control of infectious disease. As a secondary result of such measures, heart disease has now superseded infectious disease as our prime public health problem. And certainly one of the most dramatic aspects of this new problem is the frequency with which young men are struck down by acute coronary accidents, suffering prolonged illness or even death.

There are many confusing aspects to early coronary artery disease. The frequency with which the condition occurs today in this country as compared to its incidence 50 years ago is not the least puzzling of these. There is a popular belief, or at least impression, that the incidence of early coronary disease is steadily increasing. However, the clinical and actuarial evidence in support of this view is not especially impressive. When one makes proper allowances for improved medical training, more sensitive diagnostic criteria, and more exact nomenclature in case reporting, it is probable that the real increase in coronary disease during the past half-century has been no more than 15 per cent, and that the apparent increase is essentially an artefact.

Numerous theories of the causation of coronary disease have been proposed. Some of them are based to a large extent upon experimental data; others lie pretty much within the realm of hypothesis. Many of them are complementary in nature; others are quite contradictory. From this welter

of confusion, theory and counter-theory, a few hard facts have emerged. Perhaps the most important of these is the fact that early coronary disease is almost unquestionably related to some disorder of lipid metabolism. The initial visible event in the development of the disease is the formation of a cholesterol plaque within the intima of the coronary artery, and in its early stages this lesion is reversible. From this point of view such atherosclerotic changes represent a metabolic rather than a degenerative disease, and it is a disease process which can and does occur in relatively youthful individuals.

Atherosclerosis is intimately associated with hypercholesterolemia, and any condition which produces an elevated serum cholesterol level is attended by an increased incidence of atherosclerosis. This is true statistically but does not necessarily apply to the individual case. Therefore a significant number of persons with normal cholesterol levels may develop atherosclerosis. Conversely it is probably that little or no atherosclerosis will develop in certain individuals who have hypercholesterolemia.

Because of these individual departures from average behavior considerable attention has been devoted to the colloidal nature of serum cholesterol with the idea that factors other than concentration determine whether or not cholesterol is deposited out of solution within the arterial intima. It has been suggested that cholesterol normally exists in dynamic balance with serum phospholipids, and tends to deposit out when the normal ratio of total serum cholesterol to phospholipids is exceeded.¹ Another point of view is that serum cholesterol exists in a number of different forms, forming a series of giant lipoprotein complexes. According to Gofman² it is the group of lipoprotein complexes falling in the ultra-

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centrifuge class S_r 12-20 which is primarily responsible for atherogenesis. At one time it seemed that analysis of sera according to Gofman's method would provide rather reliable data of a predictive nature. Unfortunately this view has not been supported by studies in other laboratories,* and it now seems that simple determination of total serum cholesterol is clinically as useful as the more elaborate ultracentrifuge and electrophoresis studies of blood lipids.

There are a number of diseases, all of which may occur in youthful persons, which cause a disturbance of lipid metabolism characterized by a rise in serum cholesterol and an increased incidence of coronary atherosclerosis. They are diabetes mellitus,³ the nephrotic syndrome,⁴ hypothyroidism,⁵ biliary obstruction, and familial hypercholesterolemic xanthomatosis.⁶ Of this group diabetes represents the greatest problem in practice because it occurs so much more frequently than any of the others, and because of the difficulty in preventing and controlling the atherosclerotic complications. The literature is confusing in regard to this last point. There are those who claim that the atherosclerosis is effectively curbed by adequate control of the diabetes.⁷ Others contend that the atherosclerosis proceeds apace regardless of how rigidly the underlying disease is controlled.⁸

Another cause of early coronary disease is hyperadrenocorticism (Cushing's disease). The blood lipids do not follow any set pattern in this disease, the cholesterol being elevated in some patients, and normal in others. Nevertheless, the high incidence of coronary atherosclerosis in this disease points to a possible danger in the prolonged and injudicious use of corticosteroids in clinical therapy.

Hypertension of itself is associated with an increased incidence of coronary disease. It is not clear whether it is the hypertension which produces the atherosclerosis, or whether it is the vascular lesion which

causes the hypertension. A more or less educated guess would be that hypertension actively promotes the development of atherosclerosis. A definitive answer to this question would help us to determine how vigorously we should treat hypertension in youthful patients.

The great bulk of early coronary disease is not due to these specific predisposing disease entities. We do find, however, two contributory factors of such importance that they may be regarded as common denominators. One of them is hypercholesterolemia which has already been mentioned. The other is maleness. It is well known that clinically manifest coronary atherosclerosis occurs only rarely in premenopausal women. After the menopause the incidence of coronary disease in women increases and approaches the incidence in males. Presumably estrogens exert some sort of protective effect which has been well demonstrated in experimental atherosclerosis, and which forms the basis of one type of clinical management. The protective action of estrogens is not clearly understood, but there are a number of interesting observations regarding the nature of the effect. One of these is that the beta-lipoprotein fraction (presumably the atherogenic component) of the serum is significantly lower in young women than in young men.⁹ Another observation is that estrogen treatment of experimental atherosclerosis normalizes the cholesterol to phospholipid ratio of serum even though it intensifies the severity of the hyperlipemia.¹⁰

The relation of hypercholesterolemia to early coronary disease has been the subject of several clinical reports. Perhaps the most striking of these is that of Boas et al¹¹ in which 122 unselected, consecutive cases of coronary disease beginning before age 50 were studied. Seventy-one (58%) had a serum cholesterol concentration of more than 300 mg. per cent, the average for the group being 365 mg. per cent. The siblings of 50 of these patients were also studied. In 15 of the families all or most of the siblings had a serum cholesterol level above 300 mg. per cent. In another 9 families approximately one-half of the siblings exhibited hypercholesterolemia. A number of

*For details see "Evaluation of Serum Lipoprotein and Cholesterol Measurements as Predictors of Clinical Complications of Atherosclerosis. Report of a Cooperative Study of Lipoproteins and Atherosclerosis." *Circulation*, Vol. 14, No. 4, Part Two, October, 1956.

the siblings who were studied had clinical evidence of coronary atherosclerotic disease. It is findings of this type which implicate hypercholesterolemia as an important cause of early coronary disease. They also confirm the common clinical impression that heredity may be an important contributory factor.

Because, (a) strong positive correlation exists between early coronary atherosclerosis and hypercholesterolemia, (b) cholesterol occurs in significant amounts in food-stuffs, and (c) high fat diet even with normal or reduced cholesterol intake can produce hypercholesterolemia, it is of the utmost clinical importance to determine whether there is a significant correlation between coronary disease and dietary habits. The problem is indeed a complex one, even under the controlled conditions of the research laboratory. One of the more puzzling aspects of experimental atherosclerosis is the widely different susceptibility of various species. For instance increased cholesterol ingestion readily produces atherosclerosis in the rabbit, whereas the feeding of tremendous amounts of cholesterol to normal dogs will produce little or no atherosclerosis. One explanation, which admittedly is rather teleological in nature, is that the rabbit is normally herbivorous and therefore not equipped by nature to handle exogenous cholesterol properly. On the other hand, the dog is naturally carnivorous and consequently does not suffer from large amounts of dietary cholesterol. Another possibility is that the arterial intima of the dog contains relatively numerous mast cells (tissue basophils which elaborate heparin and thus protect against atherogenesis. In connection with this species susceptibility one wonders whether some humans exhibit a preponderantly herbivorous response to dietary cholesterol, and others a preponderantly carnivorous response.

Studies of human atherosclerosis throughout the world indicate that a rich diet with a relatively large proportion of fat plays an important role in the development of the disease. For instance, atherosclerotic disease is rarely observed among Chinese coolies subsisting on a low fat, sub-standard diet. In the coastal areas of China there is a significantly increased incidence of

atherosclerosis in the wealthy and better-living Chinese.¹² Observations similar to this have been duplicated in a number of different geographical areas, and tend to incriminate rich living as an important factor in the development of atherosclerosis.

Within the past few years considerable attention has been devoted to the type as well as the quantity of dietary fat. As an illustration, a low fat diet will reduce the total blood lipids, including the cholesterol and the beta-lipoprotein fractions. When the fat "deficiency" of the diet is corrected by the addition of corn oil, which is rich in unsaturated fatty acids, the blood lipid values rise, but to levels considerably short of the control values.¹³ In short, the current impression is that "hard" fats, which are rich in saturated fatty acids are more atherogenic than soft fats. Marine fish oils are probably the least atherogenic of all.

As far as the precipitation of acute occlusive episodes by dietary fat is concerned, it has been demonstrated that a fatty meal increases blood coagulability for several hours postprandially. Hard fats exhibit this action to a significantly greater degree than do soft fats, and pure carbohydrate feeding actually reduces blood coagulability.¹⁴ These effects are probably related in some manner to the observation that the ingestion of a fatty meal will precipitate an anginal attack in some individuals, and that such attacks are controlled rather promptly by the intravenous administration of 10 to 25 mg. of heparin.¹⁵ The wisdom of maintaining such individuals on low fat intake can hardly be questioned.

As for the problem of dietary fat in general, there is a strong feeling in many quarters that fat restriction is an important factor in the prevention and management of early coronary disease. As a rule simple control of obesity is not too difficult to accomplish, but the long term maintenance of a really low-fat regimen requires more perseverance and fortitude than most patients can marshal. A more tolerable regimen is offered by Wilkinson¹⁶ who recommends two fat-free meals each day and a third meal which contains fat *ad libitum*. At the present time Wilkinson has not reported his studies in detail, and we can only hope that clinical observations will eventually sup-

port the rationale upon which the proposed regimen is based.

The role of exercise in the development of early coronary disease is not clear at this time. Some attention has been given to the fact that present day living tends to be less strenuous physically than it was a generation or two ago. One of the characteristic types of youthful coronary victims is the former college athlete who "lets himself go" after entering the business or professional world. Statistical evaluation of the protective effect of exercise in humans is difficult to accomplish because men with sedentary occupations tend to be exposed to greater emotional stresses and strains than persons engaged in physically active occupations. On the other hand, it has been shown in dogs with partial occlusion of a coronary vessel that the development of collateral coronary circulation is considerably enhanced by appropriate physical exercise.¹⁷ Even in individuals with established angina, a program of mild graded exercise may help the development of collateral circulation. Although the various bits of evidence are not entirely conclusive, it does seem that regular exercise is a reasonable precautionary measure to take against the development of coronary disease.

There is a prevalent notion, particularly among the laity, that nervous tension and emotional stress must somehow or other contribute to the development of coronary heart disease. Undoubtedly this belief is due in part to the widely known fact that emotional upset can induce an attack of angina, occasionally with a fatal result. However, not until recently has there been any experimental demonstration of a mechanism whereby emotional stress could produce the organic changes which occur in coronary artery disease. The most recent report of this type shows that subacute over-dosage of rabbits with epinephrine produces a dramatic alteration of lipid metabolism with a significant rise of virtually all components of serum lipid.¹⁸ In a study, unreported as yet, of hypercholesterolemia occurring in Army officers assigned to the Pentagon, it was shown that a low fat-low cholesterol diet corrected the metabolic defect in most instances. In those cases where the hypercholesterolemia failed to respond

to this dietary regimen, it could be corrected by reassignment of the officers to positions involving fewer emotional demands and less nervous tension.* On the basis of this limited evidence it appears that there may be a truly psychosomatic factor in coronary atherogenesis.

Summary

Early coronary disease is regarded as the result of a metabolic derangement rather than the result of a degenerative process. It affects males to the virtual exclusion of females. Heredity is probably an important factor in its genesis and race probably is not. A number of specific diseases which produce hypercholesterolemia are attended by an increased incidence of coronary atherosclerosis. However, the most important predisposing cause of early coronary disease is probably dietary intemperance, particularly with respect to fatty foods. It is also likely that physical inactivity and emotional stresses play an important contributory role. Effective measures for the prevention and clinical management of early coronary disease have not yet been clearly established. Nevertheless it is reasonable to expect that effective preventive and therapeutic measures will eventually evolve from the intensive research effort which is being devoted to this disease.

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*Cf. Time, Jan. 28, 1957.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Annual Meeting at Gatlinburg in 1958

● The annual meeting in 1958 will be conducted in Gatlinburg, from April 20 through 23. The regular date for the meeting will occur in the first week in April and since that will be Easter week end, the House of Delegates voted this year to accept the invitation to go to Gatlinburg in 1958 and delegated the Board of Trustees to determine the dates of the meeting. Upon investigation, it was found that the only suitable dates that accommodations could be obtained in Gatlinburg were the dates of April 20-21-22-23. This begins on Sunday and runs Monday, Tuesday and Wednesday.

New Facilities Available

● The new Civic Auditorium at Gatlinburg, completed only this year offers very attractive features for the headquarters of the 1958 meeting. A large auditorium is available with good space for exhibits and other meetings in conjunction with the Association's program. The meeting dates for 1958 are later than usual, but that is due to the fact that the regular meeting date would begin on Easter Sunday, therefore the Board of Trustees moved the meeting up two weeks to April 20-23.

Final Draft of Inter-Professional Code Approved

● The Inter-professional Code Committee (Medical-Legal Relations) of the Tennessee State Medical Association and the Tennessee State Bar Association recently met to adopt the final approved document of the Inter-professional Code of Cooperation between lawyers and doctors. The pertinent details of the Code were approved by the Board of Trustees and the House of Delegates. The code consists of a preamble and sections on inter-relationship, preliminary conference, records and reports, expert witness fee, court attendance, and administration of the code.

Administration of Code

● The Bar Association of Tennessee and the Tennessee State Medical Association shall appoint six members from each profession who shall serve on a committee to be known as the Inter-professional Code Committee. The duties of the committee shall be to promulgate such suggestions as may be necessary to carry into effect the principles adopted; to jointly attempt to mediate and arbitrate any disputes arising between individual physicians and lawyers, or between the two professions, and otherwise implement the Declaration of Principles adopted; and to make a report annually to each of the said organizations the work of the committee during the year, and make such recommendations to the respective organizations as the committee deems desirable.

Purposes of the Code

● Acknowledging that lawyers and physicians are each members of a profession dedicated to the public interest and concerned with the problems of persons in need of the combined services of the two professions, and in order to create a better understanding and closer relationship between the legal and medical professions to the end that each may better serve the other and the public, the members of

the Bar Association of Tennessee and the Tennessee State Medical Association, agreed to the Declaration of Principles as standards of proper conduct for lawyers and physicians in their inter-professional relations. It is intended that the full content of the Code be printed in a future issue of the JOURNAL.

Societies Active In Polio Program

● Several county medical societies throughout the state have been active in all-out programs to inoculate the 20 to 40 age group for polio. One of the outstanding programs has been conducted in Bradley County where an aggressive effort to get residents inoculated resulted in shots to a total of 12,831 persons, it was recently reported. The polio vaccination program has been motivated by the Bradley County Medical Society and the County Chapter of the Polio Foundation. A breakdown of reports show the number of persons in their age groups given the shots. Under five years of age, out of a possible 4,124 persons, 1,199 have received their first shots. The second shot has been given to 1,061 and booster shots have been received by 263 persons. Equally effective have been the figures for the upper age groups. Those societies participating in the polio program are to be congratulated, as they have certainly performed an outstanding job in public service and in the polio vaccination program.

Main Reasons for Suits of Malpractice Listed

● With more and more attention being given to malpractice litigation, Tennessee doctors should be interested in a list of the main causes of threats and suits and should make every possible effort to keep these causes out of their practice. Ten major causes of malpractice suits have been listed as the result of a study made by the American College of Surgeons insurance underwriters. They are as follows: (1) Hasty or inconsiderate treatment resulting in poor patient-doctor relationship. (2) Criticism by one physician or surgeon of another's methods or results. (3) Failure to call in well qualified consultants promptly when doctor or patient is dissatisfied with progress. (4) Permitting patient to become over-optimistic about outcome of treatment. (5) Failure to maintain complete records of history, findings, treatment and operation. (6) Failure to obtain proper written consent to perform operations. (7) Failure to instruct and supervise office or hospital assistants properly as to their responsibilities and conduct. (8) Failure to see that office and hospital equipment and supplies are adequate and maintained in perfect condition. (9) Patient's dissatisfaction with amount of bill, and doctor's failure to discuss finances in advance of operation. (10) Failure to notify insurer or attorney of incidents that might result in malpractice suits.

Permanent Identification Cards For Medicare to Be in Effect July 1

● The Defense Department has decided to issue an "all-purpose" identification card for dependents. One that will be used for medical care as well as for establishing other rights and privileges. In the Dependents Medical Care Program, it will replace the current Dependency Authorization but will keep the same designation, DD1173. The Army expects to have the new card in use by July 1. Public Health Service Dependents will use the same card as the military. In officially announcing the change in the federal register, the Defense Department said uniform sponsors will be responsible for informing authorities of any change in the status of dependents.

Since Tennessee Doctors have at times run into some difficulty under the Medicare program in identifying the dependents of military personnel, this new ID card should prove helpful to the physician in identifying eligible dependents under the Medicare Program.

Public Service

THE TENNESSEE TEN

TSMA Representative to Appear Before Legislative Council

● TSMA has been requested by the Tennessee Legislative Council Committee to send a representative to appear before the Committee June 6 and to make a statement on behalf of the Association in regard to nursing school requirements, the need for more nurses, etc. President J. Paul Baird has referred this request to the Public Service Committee, and a meeting of the Committee's executive Sub-committee was scheduled for June 3 to select TSMA's representative.

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Views Aired By 11 Agencies, Individuals

● The Sub-committee was also to consider signing a joint statement being prepared to represent the views of all agencies which will appear before the Legislative Committee. The other individuals and agencies are: State Commissioner of Health, State Commissioner of Mental Health, Tennessee Hospital Association, Tennessee Nurses Association, Tennessee Registered Practical Nurses Association, League of Tennessee Nurses, Tennessee Board of Nursing, Vocational Education Department of State Department of Education, and Wm. Barnhart, chairman, Professional Activities, Maury County Hospital, Columbia.

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Statement Sets Forth Facts

● The joint statement sets forth facts and figures to support the contention that there exists a severe shortage of trained nurses, professional and non-professional. It makes no recommendations but requests that the Legislative Committee appoint a sub-committee to go into the problem with the above-mentioned groups with an eye toward finding possible solutions.

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Medical Assistants Course Offered

● A course in public relations for medical assistants is to be offered this fall to doctors' office personnel in Nashville, Davidson County, and adjacent counties. The eight-hour course is being jointly sponsored by the Public Service Office, the Nashville Academy of Medicine, and the Nashville Chapter, Medical Assistants Society of Tennessee.

Tentative starting date for the course is September 10. The curriculum will include such subjects as Medicare and Insurance, Patient's View of the Office, Telephone Technique, and Grievances and Malpractice suits. Enrollment fee will be not more than ten dollars. The course will be taught in two-hour periods for four successive weeks, with a banquet, critique, and awarding of certificates to be scheduled for the last meeting night.

Doctors in other medical societies who might be interested in arranging such a course are urged to contact the Public Service Office or the officers of their local Medical Assistants Society chapter.

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Dr. Kampmeier Seeks Antique Instrument Collection

● The TSMA building may house a valuable collection of antique medical instruments if a project launched by Dr. R. H. Kampmeier is successful. He hopes that the select group of instruments will include those which are rare . . . and extremely interesting. "The collection should be of interest

to members of the medical profession," Dr. Kampmeier says. "Just as an English teacher should know something about Shakespeare, the practicing physician should have a background knowledge of the history of his profession."

The collection will be kept in the two glass display cabinets in the TSMA building foyer. Because of the limited amount of display space, it is felt that the collection should be characterized by quality rather than quantity. Dr. Kampmeier generally describes the type of instruments he is looking for as "ones which help show progress in the field of medicine." He also says they should be at least 50 years old.

It is hoped that members of the medical profession and their families will be on the look-out for such instruments. Many such instruments are lost because they just lie around in attics and storage rooms, and are eventually thrown away. We at TSMA office would like very much to correspond with anyone having instruments which they think might be added to the collection.

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Shortage Eases In Vaccine Supply

● The long drought in the supply of Salk vaccine appears to be nearing an end. While no surplus of the vaccine has been reported, drug supply houses say that their supply is building up. This situation should encourage those medical societies who have shelved their vaccination programs to begin checking on the available supply in their communities to determine whether their programs can now be implemented.

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Fair Exhibits Available

● A note to county medical societies who might be interested in putting on exhibits at their local fairs this fall. The AMA points out that exhibits are available to societies and will be sent them, upon request, at no other charge than shipping costs. However the AMA reports that requests are already being received for exhibits and societies should order exhibits as soon as possible to insure delivery. The Public Service Office has a limited supply of catalogs which list and describe the exhibits and will supply these catalogs to local societies upon request.

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AMA Offers Health Record Booklets

● The Public Relations Department of AMA will supply local medical societies and individual physicians with copies of a health record booklet, "Your Family Health Record." The booklet is designed primarily for family groups and, while not a substitute for doctors' records, is a compilation of pertinent health facts kept by the head of the household "like vital statistics in the Bible." The booklets can be ordered either directly from AMA or through the Public Service Office.

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Health Council Considers Indigent Plans

● The State Public Health Council was to meet June 7 to consider approval of contracts drawn up between the Health and Welfare Departments to administer the Indigent Hospitalization program. Main features include: Plan "A" for persons medically but not legally indigent, and Plan "B" for welfare recipients; definition of illness requiring hospitalization; ceiling of \$25 per day per patient for hospitalization; and allocation of funds on a monthly basis but with no county quota.

Under Plan "B", the screening committee is abolished and eligibility is determined by a medical review officer, an M.D., who would be appointed in each county by the State Commissioner of Public Welfare.

Jack Drake
Public Service Director

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Discussion

DR. FRED GOLDNER, Nashville: I want to congratulate Dr. Brody on a thorough and clear discussion of a complicated subject. He has done an excellent job of crystallizing the current theories of the causes of coronary artery disease in young individuals. I would like to mention once again one or two of the points which he has stressed.

We cannot overemphasize the fact that there is a strong preponderance of this disease in the male. I would like to carry this a step further and state that in the absence of two diseases, coronary artery disease is a rarity in the female before the menopause. These two diseases are, of course, diabetes and hypertension. The multitude of other conditions which are associated with altered fat metabolism are extremely rare. Consequently, if a female has an acute myocardial infarction before the age of 45, she probably also has either diabetes or hypertension.

As we all know no such associated condition is very often found in the case of the male who has an acute myocardial infarction. As for hyper-

tension, it has been shown that the incidence of prior hypertension is only 27.2 percent in the male and it is as high as 71 percent in the female who develops a coronary occlusion.

We might also recall the relationship of lipid metabolism to coronary artery disease. I am reminded of Dock's statement that coronary artery disease is the most human of all diseases. It can be produced in other species only by extremely drastic and abnormal changes in their diet so that the situations which are produced are no longer natural. Consequently, our most valuable data on the relationship of fat metabolism and myocardial infarction may come from man himself and, as we mentioned, this information is circumstantial evidence. It is highly suggestive circumstantial evidence, however. I would like to briefly mention one segment of these studies.

First—It is known that an outstanding feature of all populations which have relatively little coronary disease is a very low consumption of fat. The Chinese and the Bantu in Africa are particular groups which have been studied. Generally speaking, no more than 20 percent of their calories comes from fat. Americans, on the other hand, have the highest percentage of coronary disease and also the highest fat percentage of their diet—namely 40 percent. The Chinaman who lives on the coast and has a higher fat percentage has a higher percentage of coronary artery disease. The Chinaman who moves to America and eats still more fat has a still higher percentage of coronary artery disease.

We might ask if it is possible after 30 or more years of living in coronary disease regions to change the fat intake and reduce the outlook of coronary disease. After World War II in countries, such as Finland and Norway, where fat intake was sharply reduced, mortality from coronary heart disease fell sharply in less than two years. In Sweden this dietary restriction was less and coronary heart disease decreased, but to a lesser degree.

In a slightly different vein, I want to say a word about the so-called inhibition effect of unsaturated fatty acids which Dr. Brody mentioned. It has been shown in people who already had a 21 percent lowering of their plasma cholesterol after a fat-free diet that an additional 12 percent lowering occurred when unsaturated fatty acids or vegetable fat in the form of corn oil was added to the diet. When butter, or animal fat was added, there was a sharp rise.

We Americans are living off the fat of the land, but unfortunately, we have carried it to extreme, and in addition, it seems to be the wrong kind of fat.

I do not want to mention prevention here but certainly, according to evidence so far available, we should take one or more of the available steps to reduce plasma cholesterol and lipids in patients who have already had an infarction. This at least is a beginning.

Once again I want to congratulate and thank Dr. Brody for an extremely informative paper.

This distressing and troublesome complaint is of unknown cause. Much research is needed before the varied causes are fully understood.

HALITOSIS*

CHARLES E. LONG, M.D.,† Memphis, Tenn.

Fetor oris, *fetor ex ore*, and halitosis are terms used to signify bad breath. Certainly this is a very common and a very ancient problem. Much has been said about halitosis but there is a paucity of scientific work in recent years on the problem. Not one article in English could I find on this subject during the past four years, other than some mention relative to suppression of odors by chlorophyll preparations. The modern textbooks of medicine, physiology, and otolaryngology do not even list halitosis in the index!

One should pity the person who suffers from persistent foul breath for he labors under a true social handicap. No one enjoys smelling an offensive breath and the natural result is avoidance of close contact. A person seldom can determine or sense his own odors and consequently he is not aware of any odor. The constant fear of offending, plus the inability of the patient to determine for himself whether his breath is offensive, may precipitate a true neurosis. The fear of this real and imaginary symptom contributes to millions of dollars spent on advertising to sell mountains of flavoring agents and preventives, such as Listerine, Colgate, Chlorets, Sen-Sen, Life-Savers, and chewing gum. A little subtle questioning on the part of the otolaryngologist will reveal the surprising frequency of this unmentioned symptom as a reason for the seeking of relief from a chronic sore throat or sinus disease.

The local sources of fetor oris are found quite easily as well as the prescription of appropriate treatment. A few may be listed:

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| 1. Smoking | 6. Blood (extractions, surgery, bleeding gums) |
| 2. Food particles about the teeth. | |
| a. Decayed debris | 7. Coated tongue |
| b. Aromatic foods | 8. Unclean dentures |
| 3. Dental caries | 9. Foreign bodies |
| 4. Decayed and infected debris in tonsillar crypts. | 10. Malignant growths |
| 5. Infections (tonsils, gums, sinuses, etc.) | 11. Lung diseases |
| | 12. Musical horn blowing, mouth breathing, etc. |

The systemic sources of breath odors are much more elusive and hence more difficult of management. Some may be quite imaginary but nevertheless seem to have been associated. Systemic Stats or Diseases:

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| 1. Menses | 13. Gout |
| 2. Hunger | 14. Epileptic seizures |
| 3. Constipation | 15. Some corneal ulcers of the eye |
| 4. Morning breath | 16. Pregnancy |
| 5. Aromatic foods and drinks | 17. Pelvic surgery |
| 6. Impaired fat digestion | 18. Typhoid fever |
| 7. Diabetes mellitus | 19. Measles |
| 8. Uremia | 20. Scarlet fever |
| 9. Intestinal hemorrhage | 21. Smallpox (sweet potatoes) |
| 10. Cirrhosis liver | 22. Age |
| 11. Emotional crisis | 23. Racial Characteristics |
| 12. Poisons (lead, phosphorus, mercury, arsenic hydrocyanic acid, etc.) | |

Crohn and Drosd¹ seemed to prove with their patients that unless pathologic oral or nasopharyngeal conditions exist, the mouth, the teeth and the pharynx play little or no part in the production of essential halitosis. They carried out investigations on the surgical wards in patients who had various fistulous tracts. Garlic, when placed directly into the intestinal tract, would appear on the breath within an hour or so depending upon where it was placed. Almost at the same time it could be detected in the bile. The breath and bile retained the odor up to 48 hours, long after all traces had left the fistulous tracts.

They worked also with many more volatile substances such as oil of peppermint, paraldehyde, and skatole. These and other simple experiments show that the lungs function as an organ of excretion, withdrawing volatile materials from the circulating medium and exhaling them on the breath.

"Let the hypothesis be made that essential hali-

Read before the meeting of Tennessee Academy of Ophthalmology and Otolaryngology, April 9, 1956, Memphis, Tenn.

tosis is the excretion on the breath of malodorous fats, fatty acids or volatile substances resultant from some fault in the digestion or metabolism of fat. The noxious volatile matter is absorbed from the digestive tract (probably from the lower part of the ileum), is carried to the liver (where insufficient or ineffectual neutralization or detoxification ensues), is partly excreted in the bile but in the main is picked up by the circulating blood, which, in traversing the alveoli of the lung, parts with the substance, which is exhaled on the breath. What clinical facts can be brought forward to substantiate such a hypothesis? It has been noted that the Chinese strenuously object to the body odor of white persons and attribute that odor to the milk and butter which caucasians so freely ingest. Caucasians are said by the Chinese to smell of "Cow." We have observed that patients with ulcers given a Sippy diet or, particularly treated by the continuous milk drip method frequently have true halitosis. If such patients are given a diet of cereal, eggs, and lean meat—a diet of low fat content—the typical odor disappears. If a high fat diet containing butter and milk is reinstated, the halitosis will readily recur.

Patients suffering from true halitosis are similarly amenable to the therapeutic test of a low fat diet. If a reducing diet, low in fats (40 to 60 grams a day), is administered, a prompt disappearance of the halitosis odor occurs."

Massler and associates² reviewed the subject of mouth odors. Their summary indicated that the normal breath may vary considerably from a pleasant, sweetish quality to a heavy, pungent, and even unpleasant quality, depending upon the age and sex of the person examined, as well as the time of day and state of hunger. In addition to these factors, the dietary as well as smoking habits determine the quality of the breath.

The breath changes with age. In the very young of both animals and humans the breath is normally sweet and pleasant. In the aged the breath is more usually heavy, pungent, and somewhat sour. A "hunger breath" can be almost universally observed in adults. The breath of a normal person upon awakening in the morning is usually pungent and disagreeable. This is so common as to be classified as "morning breath." In the absence of substances such as alco-

holic beverages, tobacco, aromatic foods such an unpleasant taste and odor is produced by putrefaction of epithelial and food debris. Stagnant saliva of itself quickly emits a musty odor. This condition is easily remedied by brushing the teeth, the use of antiseptic rinses, or eating breakfast.

A "hunger breath" can be almost universally observed in adults. Some workers even found that the intensity of mouth and breath odors increased directly with the length of time elapsed after meals. Massler, Emslie and Bolden² found that they could only mask this hunger breath by aromatic dentrifices and mouth rinses. The hunger odor could still be detected emanating from the lungs, and superimposed upon the more pleasant aromatic odor from the mouth. On the other hand they found the "hunger breath" was quickly and completely dissipated by the ingestion of even a small quantity of nonaromatic foods, such as a slice of bread or an apple. This should be of interest to those who are prone to skip breakfast or lunch. Some malodorous metabolites are apparently to blame for this physiological condition.

Summary

Halitosis is a very real and common malady. It deserves more study and consideration by both the medical and dental profession. The breath of the normal person varies from pleasant to disagreeable according to many variable factors.

True or essential halitosis remains a medical enigma. The physiologic factors of body metabolism may someday lead us to a therapeutic remedy for a distressing ailment.

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STAFF CONFERENCE

Vanderbilt University Hospital*

DR. EDWIN CHOBOT: Our first patient is a 10 year old girl who has had chronic ear disease all of her life. Her left ear has drained intermittently during the past four years. Four or five days prior to admission she began to complain of earache on the left. The drainage from this ear was more profuse than usual and she was noted to have fever. The next day she developed anorexia and vomited. It was noted by her physician that her neck was stiff, and the left side of the neck was tender. No antibiotic therapy was administered prior to her hospitalization.

Upon physical examination she was found to be an acutely ill young girl. Her temperature was 101, pulse 120, and respirations 24 per minute. There was considerable tenderness of the neck and questionable stiffness. The left tympanum and external auditory canal were coated with foul smelling, pale green exudate. There was no mastoid tenderness. Kernig's sign was negative. The deep and superficial reflexes were normal, and there was no Babinski sign. The pupillary size and reactions were normal. There was moderate bilateral papilledema, and the retinal veins were engorged and tortuous. The remainder of the examination was not contributory.

Laboratory findings included a white blood cell count of 18,400 with a pronounced shift to the left in the differential count. X-ray examination of the skull revealed only evidence of chronic mastoiditis on the left. A chest film was negative. On lumbar puncture, the opening pressure was 320 mm. of cerebrospinal fluid. The fluid was clear and colorless with a protein content of 14 mgs. per cent and 3 lymphocytes per cu. mm. Cultures of the blood and cerebrospinal fluid were sterile. A heavy growth of *Proteus vulgaris* was cultured from the aural discharge. This organism was sensitive to Chloromycetin and Cathomycin.

On therapy with Chloromycetin the temperature fell rapidly to a normal level, and she remained afebrile. On the third day of hospitalization, a mastoidectomy was done. A small accumulation of pus was encountered. During the procedure the lateral sinus was inadvertently opened, but no blood flowed from this vessel. A small clot was removed from the sinus which was cleared for about a centimeter on either side of the opening. She has had an uneventful postoperative course and is now asymptomatic.

DR. CULLY COBB: Our reasons for thinking she had a thrombophlebitis of the lateral sinus rather than a brain abscess

were several. In the first place, a brain abscess would have been in the dominant temporal lobe, and she showed no signs of such involvement. Specifically, there was no aphasia. There was no bradycardia and, aside from the papilledema, there were no indications of increased intracranial pressure or of focal swelling of the brain. There was one additional neurologic sign, namely a weakness of superior gaze of the right eye. This might suggest an extension of the thrombophlebitis through the petrosal vein into the vessels in the vicinity of the midbrain, indicating that she may have had a fairly extensive thrombophlebitis. The fact that the sinus was completely occluded as far as it could be dissected with ease confirmed the suggestion that this was a chronic, longstanding inflammatory occlusion of the lateral sinus.

Today this is almost an ancient disease that we see very infrequently, but it will continue to crop up from time to time when ear infections get out of control or are not adequately treated in the early stages. This is one of the complications of the extension of infection from the air cavities of the ear into the bone. Local osteomyelitis is followed by inflammation of the epidural space. From the dura infection gains entrance into the lateral sinus or, in the case of brain abscesses, the inflamed dura becomes adherent to the pia and the underlying brain and infection extends into the temporal lobe or occasionally, into the cerebellum.

An interesting feature of lateral sinus thrombophlebitis is the fact that papilledema is so prevalent (more so, statistically at least, than in brain abscesses of otogenous nature). Another point of interest is the high, spiking, irregular fever which she had the first day of hospitalization and then the quick response to antibiotic therapy which has been noted in the past in cases of this sort. Treatment in a case of this type probably should be confined to clearing the local infection plus heavy antibiotic therapy with every effort to determine the nature of the organism and its sensitivity. The question of blocking further extension is a matter that has been discussed and debated in the past. I personally have been inclined to

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feel that controlling the infection is likely to control the extension of the thrombosis or thrombophlebitis in these cases, but I would be interested to hear what Dr. Meacham has to say about this aspect of the problem.

DR. WILLIAM MEACHAM: First of all, we know the patient had mastoiditis, which is, in essence, an osteomyelitis of the temporal bone. If this girl begins to show intracranial complications, it is almost certain that the following sequence of events is taking place; first, she had an epidural abscess,—and let me point out that an epidural abscess in these terms may be nothing more than infected granulation tissue,—where the infection has broken through from the mastoid and is adjacent to the lateral sinus. Secondly, this infection can penetrate the dura and cause a septic thrombosis of the lateral sinus. There can be all degrees of extension of that thrombosis even down to the internal jugular vein which is, of course, a continuation of the lateral sinus, and then septic emboli may break off and enter the heart. Finally, the direct extension of the infection can go on through the dura and produce a subdural empyema or other intracranial complication. So far as I know it is pure chance as to whether the individual will have a temporal lobe abscess or a cerebellar abscess because the tentorium splits in that area. The location of the abscess depends upon whether the infection breaks through supratentorially or infratentorially. Since we are concerned with the dominant hemisphere, the absence of aphasia, as Dr. Cobb mentioned a minute ago, does in a sense militate against a temporal lobe abscess but does not necessarily rule it out. This girl could still have a cerebellar abscess. In the days when these patients were treated by prompt mastoidectomy with the use of what antibiotics were available, the proper order was to proceed with the local operation on the mastoid. It was always advisable to open the lateral sinus if one could not by inspection tell whether it was patent. When there was epidural granulation and the normal topography was disturbed, it was often necessary to open the lateral sinus to see whether it was thrombosed. I think that the main

reason for doing this was to establish beyond any doubt that the patient did have a thrombosed lateral sinus, so that shortly thereafter one could ligate the internal jugular vein to protect the individual against the possible propagation of septic material from the sinus.

If the patient was found to have an epidural or subdural abscess that was handled accordingly, and if the patient did not improve, usually an air study was carried out. If neurologic localization was sufficient, one would drain the temporal lobe abscess, or the cerebellar abscess, which usually would control the situation over a long period of time. This relates to the days when cerebral fungi and cerebral hernia were frequent. Now the direct attack upon the abscess is not made until sufficient time has elapsed for encapsulation to occur. Then one can remove the abscess in its entirety just like a neoplasm. There has really been a great change in the whole tenor and philosophy of the treatment of these lesions. As a matter of fact, now it is a rarity to have a case like this one on the wards.

DR. BERTRAM SPROFKIN: As indicated by Dr. Cobb and Dr. Meacham, intracranial sinus thrombophlebitis has become uncommon since the use of effective antibiotics in the treatment of mastoiditis and other suppurative processes involving the ears and paranasal sinuses. However, we continue to see some cases of aseptic thrombosis of the intracranial veins and sinuses. Women with postpartal thrombosis of the cerebral veins and intracranial sinuses constitute a significant proportion of these cases. This diagnosis should be suspected in women who develop headaches, convulsions, hemiparesis or hemiplegia, and even papilledema early in the puerperium. Recently, a patient has been reported to have had a venous sinus thrombosis occur during the first trimester of pregnancy. This problem doesn't relate directly to the case under consideration, but is one which is confused with eclampsia or a cerebral arterial catastrophe, and it is well for the clinician to keep this entity in mind.

DR. CHOBOT: The second patient is a 7 year old boy who was first seen in our clinic 5 years ago, about 5 weeks after he had experienced headache, fever, and nausea followed by weakness of the right leg. He was considered to have had

poliomyelitis and has been followed periodically since then for orthopedic procedures on his shortened right leg, which has remained weaker than the left. The present illness began 5 days prior to admission with fever, headache, and sore throat. The next day he began to complain of double vision, and on the third day of his illness his mother noticed that his eyes were deviated to the left, much as you see them now. The following day he began to stagger, and she noticed that his right leg seemed weaker than usual.

Upon physical examination, this boy kept his head turned toward the right while his eyes were deviated toward the extreme left. It was impossible to demonstrate any right lateral gaze. He was mentally quite clear and did not show signs of increased intracranial pressure. The optic discs were flat. There was no corneal reflex on the right, and the left corneal reflex was greatly diminished. There was a left Babinski sign and sustained ankle clonus on that side. One observer noticed past pointing on the left. There was diminished sensation over the entire left side of the body, including the head. He was also noticed to have weakness of the muscles supplied by the fifth nerve on the right. Since he has been in the hospital the clinical picture has changed. He no longer has a Babinski sign and the clonus of the left ankle has disappeared. The eye signs are unchanged. His hypesthesia has persisted. It should be added that on admission he was also found to have a slight right facial weakness.

DR. SPROFKIN: The unusual feature about this boy's illness is the relatively brief history which dates back for a period of only five days prior to admission. This child has a constellation of cranial nerve signs. There is a facial paralysis on the right which is not typically a peripheral facial nerve involvement. The weakness is greater in the lower pole of the face than in the upper pole. He can close his eyes and wrinkle his forehead. A partial involvement of the facial nerve nucleus might explain this picture. This boy's first symptom, the paralysis of conjugate gaze to the right, is probably the one which deserves the most attention. Not only does he show a paralysis of the right external rectus muscle with inability to adduct the right eye, but he is also unable to adduct the left eye toward the nose when he attempts to look toward the right. On convergence, however, the left eye can be adducted slightly. Since the center for convergence is located more rostrally and is not involved in a pontine lesion, there results this rather striking dissociation between the movement

of the internal rectus muscle on lateral gaze and upon convergence. This condition is referred to as "internuclear ophthalmoplegia" and is virtually pathognomonic of a lesion of the median longitudinal fasciculus in the pons. It is frequently encountered in multiple sclerosis and less commonly it is seen in patients with neoplastic and vascular lesions of the pons.

In this patient the right side of the pons is the more involved area since that is the side of the facial involvement and absent corneal reflex. Also, he has a contralateral hypesthesia. The paralysis of conjugate gaze is toward the side of the pontine lesion. However, in the case of a destructive lesion of a hemisphere where the prefrontal region is involved, the patient's eyes are usually deviated toward the side of the lesion, and the paralysis of conjugate lateral gaze is, therefore, away from the side of the hemispherical lesion. Gowers used to say that the patient looks toward the side of the lesion when he has suffered a cerebral vascular accident. In the case of a so-called "irritative" lesion of the cerebral hemisphere, such as a tumor which is causing focal seizures, the eyes turn away from the site of the lesion.

This child, then, shows a series of neurologic disturbances, all of which point to a lesion in the pons. This lesion is presumed to be above the crossing of the secondary trigeminal fibers and that is the reason why there is no crossed sensory involvement (i.e. head and trunk on opposite sides) as one would encounter in a medullary lesion.

The other aspect of our problem here is to determine the type of lesion which is present. If this were a vascular lesion, one would expect this boy to be more acutely ill, and the onset should have been more apoplectiform. Despite the fluctuation in his clinical findings, I should think that a glioma of the pons is the most likely diagnosis. It is well known that these tumors do not produce pressure signs until almost the terminal stages. The spinal fluid findings in these cases are generally normal, as they are in this case, and plain films of the skull as well as air studies are often not revealing. Occasionally, a pneumoencephalogram reveals some encroachment of the

enlarged pons upon the air filling the basal subarachnoid cisterns. This type of tumor is more common in children than in adults, and the great majority of the reported cases have occurred in children under ten years of age. Most of the cases seen in this hospital have been encountered on the pediatrics service. One is not very hopeful about what can be accomplished by an operative exposure of such a tumor other than verification of the diagnosis. Very often the child's condition worsens after such a procedure. I would certainly not recommend a suboccipital craniectomy in this child, and I believe that is the opinion of the others who have been following this case.

These pontine tumors of children are usually glioblastomas, or, as they are designated by some neuropathologists, "astrocytoma-grade 4." Some of these tumors were formerly called "bipolar spongioblastomas."

DR. COBB: I agree with everything Dr. Sproffkin said except the diagnosis. This is not a matter of great difference because we both feel that the management of the case should be the same. When I saw this boy I was impressed with the acuteness of his disease and felt that this was an acute inflammatory or degenerative focal disturbance of the pons rather than a neoplasm. The fact that he appears to be improving would seem to favor the possibility of a lesion other than a neoplasm, and, although it is speculative, one wonders if the attack that was considered to be poliomyelitis several years ago may not have been a similar lesion involving the spinal cord. This raises the diagnostic possibility of multiplesclerosis in this case. We can't affirm the diagnosis of multiplesclerosis in a situation like this, but we can suspect it and watch for further episodes which might substantiate such an impression. He is young for this disease, but it has been seen in children. If he goes on and recovers to a great extent from this attack and some time later has further attacks of central nervous system disease of a focal nature, such a diagnosis would be firmly established. If this is a neoplasm, a means of explaining the acute development of symptoms would be to sup-

pose that hemorrhage had occurred into the tumor. On the other hand these tumors are not especially prone to become hemorrhagic, particularly in children.

Many of these tumors were once called "spongioblastoma polare," as has been mentioned. This term has become obsolescent because it has been demonstrated that the polar arrangement of the tumor cells is actually due to the structure of the pons rather than to the growth pattern of the tumor. Most of these tumors were probably astrocytomas.

DR. SPROFKIN: I would certainly hope that Dr. Cobb is right in his clinical impression of this case, because certainly some ill-defined inflammatory lesion, or even multiplesclerosis, would be a much more benign situation than a glioma of the pons. With regard to the recent improvement, it should be pointed out that temporary remissions have been described in cases of pontine glioma in children. My objection (in which Dr. Cobb apparently concurs) against a diagnosis of multiplesclerosis on the basis of the present clinical picture, is that one lesion can explain this entire process. Of course, if one postulates that the trouble with his leg four years ago was not poliomyelitis, which it certainly seems to have been, then the necessary multiplicity of lesions can be provided for the diagnosis of the demyelinating disorder.

It has been noted recently that this boy has had some difficulty in swallowing his secretions, and I am afraid that this may be further evidence for the type of progression which one would expect in such a tumor. Certainly, it would require inspection of the pons to confirm a diagnosis of tumor, although in this connection it is of interest that the pediatricians of the nineteenth century, upon viewing this lesion at autopsy, referred to it as "hypertrophy of the pons."

Some patients with pontine glioma have had a clinical course of two to three years. One exceptional case, recently reported from the Mayo Clinic, has survived for 17 years.

CLINICOPATHOLOGIC CONFERENCE

Vanderbilt University Hospital*

Bilateral Cystic Disease of the Kidneys

This was the first admission of this 4 week old white girl who was referred from a local hospital with the:

C.C.: "Failure to respond to treatment"

F. H. and P. H.: Noncontributory

P. I.: Weight gain was poor during the first 3 weeks. (B. W. 5 lb. 13 oz.) Ten days prior to admission the patient became very irritable and began taking formula poorly. She was started on phenobarbital every 3 to 4 hours by the family physician but it was given only once daily. Eight days prior to admission she developed rapid respirations which progressively worsened but had no other symptoms or signs. Six days before admission the patient developed a "mild" diarrhea. She was afebrile without vomiting, but rapid respirations persisted. The patient was admitted by her family physician to a local hospital, where she was said to be dehydrated, anemic and in acidosis, and was treated with I.V. fluids, oxygen and blood transfusions. Chest film was said to be negative. The diarrhea subsided but the patient became less responsive and therefore was transferred to Vanderbilt University Hospital.

Examination: Wt. 5 lb. 8 oz. The patient was a small malnourished, dehydrated girl with rapid respirations without retractions. The skin was dry, loose, with "dusky appearance." Lungs were clear with good exchange. There was no odor of acetone. No cardiac enlargement and no murmurs were found; rhythm was regular. Abdomen was soft and without palpable masses.

Laboratory Findings:

Data Received from Local Hospital: 5 days prior to admission. Hgb. 12 Gm; WBC 26,400; Diff. 76% segs., 10% lymph, 4% mono. Urine pH 5, acetone neg., diacetic acid neg. 4 days prior to admission. Hgb. 10.5 Gm.; WBC 15,800; Diff. 50% segs., 45% lymphs.; Urine pH 6, acetone neg., diacetic acid neg. 1 day prior to admission. Hgb. 14.5 Gm. (following transfusion). Just prior to transfer: Co_2 15 vol.%; Cl. 122 meq/4; bl. and sugar 97 mg.%; TSP 9.7 Gm.%, A/G 6.9/2.8; urine pH 6, Sp.Gr. QNS.

At Vanderbilt: CO_2 15 vol.%; Blood culture—no growth.

Hospital Course: She was placed in oxygen and IV fluids were started. The patient received 30 cc. of sodium bicarbonate, and 300 cc. D.W. After 3½ hours respirations suddenly slowed and became "gasping" in character, then ceased. Arti-

ficial respiration was to no avail. Heart action ceased 4 hours after admission.

DR. CALVIN WOODRUFF: The case we have this afternoon is that of a 4 week old white female who came in with the chief complaint of failing to respond to treatment. I'm not going to read all the protocol, but I want to take up a number of points in it and discuss them.

First, it might be interesting to see what sort of a baby we were starting with before the onset of the present illness, and to put down some of our thoughts about the situation as it developed. We're told that the child gained weight poorly during the first two weeks of life. Perhaps this was a sick baby before the onset of what appears to be the present illness at about 3 weeks of age. If the child were not doing well I would think that we're going to have to start to consider renal insufficiency, presumably on a congenital basis as one of the factors in making the initial diagnosis on a child who is not doing well. The other thing that I'd like to put down is the concept of a child which is not premature by birth weight but at this time, and subsequently, has many characteristics of a premature infant and we will call this immaturity, a functional stage characterized by immaturity in physiological functions.

At the onset of the present illness at about 3 weeks of age, the patient became irritable, took formula poorly, and was treated with phenobarbital. This drug was given only once a day, from which I gather that phenobarbital accumulation did not play a very important part in the subsequent events. And then, 8 days prior to admission, the patient developed rapid respirations which gradually worsened. This is certainly a leading symptom. A pronounced hyperpnea persisted until the time of death. What does this suggest? It could be on the basis of diabetes; it may not be due to a metabolic alteration; it may be due to central stimulation of the respiratory center. I think we would consider this as some type of encephalopathy, whether it be due to an infection, such as encephalitis, or to a local infectious or space-occupying lesion. The rapid respirations progressively worsened and we'll have to look down a little

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further and see that this was not associated with fever; it was not associated with retraction, and no pulmonary findings occurred. The X-ray is reported as being non-revealing. Actually, it's rather difficult to postulate hyperpnea on the basis of intrinsic pulmonary disease in this child. We have no history of aspirin ingestion, but it is perfectly possible that the parents gave this small baby a significant amount of salicylate and produced the hyperpnea. That is something we'll have to consider rather seriously.

The next episode is about 2 days later with the development of "mild" diarrhea; since mild is put in quotation marks in the protocol this makes interpretation quantitatively very difficult. It's difficult to assess the amount of fluid which was lost in this diarrhea. But I would interpret the presence of diarrhea in several ways. One, certainly, is that it would produce dehydration and aggravate an acidosis that might be present. Diarrhea in a small infant sometimes represents starvation, it sometimes represents infection within the peritoneal cavity and it certainly may represent a specific infection in the gastro-intestinal tract. The lack of fever at this point, the lack of vomiting at the time the patient was admitted to another hospital and subsequently, certainly are very helpful negative findings. I have in my own list added in here adrenal insufficiency of the type described by Jaudon¹ as occurring in small infants, but vomiting, recurrent vomiting and confusion with the diagnosis of pyloric stenosis is a common picture and so I would think that the absence of vomiting probably eliminates the possibility of adrenal insufficiency. Another interesting possibility is sepsis, and the lack of fever is not entirely incompatible with the diagnosis of sepsis in a 1 month old baby who has not done well.

On admission to the other hospital the child was said to be dehydrated, anemic and in acidosis. His treatment was by intravenous fluids, oxygen and blood transfusions. The diarrhea subsided, but at this point the patient became less responsive. Now if we can analyze the situation just before the child was referred to Vanderbilt

Hospital, we see that there are some laboratory observations during this period of time. The Hgb. was 12 Gms.%, later 10.5 Gms.% previous to the transfusion which brings out the differential diagnosis of anemia at this age. What types of anemia do you have to consider? Hemolytic anemia. Are there any evidences in the protocol otherwise to substantiate this diagnosis? No, we have no obvious evidence of jaundice nor other hematology to help us with the problem so there is no reason to confirm the impression that this might be hemolytic anemia. We'll have to pass that by. How about blood loss? Would this cause an anemia in this infant? He comes in to us weighing a few ounces less than his birth weight. Certainly rapid growth is not the etiology of this anemia. There is no evidence of blood loss from the body. Could blood loss from the circulation to some other tissues produce this severe anemia? Could this be compatible with intracranial hemorrhage? There isn't too much room in a small baby's head for a large amount of blood, but it is conceivable in the abdomen. What other types of anemia could we consider? Yes, certainly sepsis. Well, what is the normal state of the marrow in a 4 week old baby? This is the age in which we are seeing development of the physiologic fall in hemoglobin of the newborn period which reaches a maximum at about the age of 10 weeks, but normally the hemoglobin is falling at about this time and looking up the normal values we find that the normal values for 4 weeks has a mean of about 14 gms. Those studies show that the hemoglobin concentration is about 17-20 grams at birth. The anemia was corrected to a Hgb. of 13.5 gms. which was normal for a child of this age.

At the time that the child got worse, blood chemistries were drawn. The carbon dioxide capacity was 7 Meq./L. The serum chloride was 122 Meq./L. Just what does this tell you about the state of the extracellular electrolytes—How would you interpret these 2 observations? How would you interpret the findings of the very low CO₂ combining power of 7 Meq./L. and the serum chloride of 122. We know that as far as the anions are concerned we have

chlorides of 122 which is a good bit higher than the 105 which is about normal; we have a CO_2 combining power of 7 which is greatly reduced from the normal which is about 22 in this age group; we know that by adding 15 to these values, other things being equal, that we can reasonably approximate the serum sodium. This value is 144 Meq./L. In terms of concentration of the total base it might be essentially normal. What must have happened was that the CO_2 became smaller at the same time that the chloride became larger. And this would happen either in an extremely well compensated respiratory alkalosis stemming from essential hyperpnea, or it could be the result of a severe metabolic acidosis. This is the situation in which you wish you really know what pH was because it would permit differentiation of these two possibilities. We're going to have to decide on purely clinical grounds given in the history and physical examination. Before I discuss a point of view about this I'd like to find out how many here think this is acidosis (majority of audience) and how many of you think it is a compensated alkalosis (only a few proponents).

Against the diagnosis of a compensated respiratory alkalosis are a number of facts which I would like to bring together. Among diseases that might produce primary stimulation of the respiratory center, the two negative diacetic acids in the urine would effectively rule out salicylism in this patient. The evidence up to this point for other central nervous system defects is not clear-cut. On the other side we see a child who is behaving in a very immature fashion in terms of electrolytes quite similar to that of a premature, particularly one which develops a metabolic acidosis. Premature infants normally have serum chlorides that are a little higher than normal and serum CO_2 's that are a little bit lower than normal, but this usually doesn't persist more than a week or two. But in some, particularly on cow's milk feedings, the load of electrolytes that are presented to an immature kidney in the presence of relatively poor fluid intake can easily produce an acidosis. The symptoms of metabolic acidosis in the immature infant are irritability, poor feeding

and the development of rapid respirations. High fever is often a part of this picture, but not necessary for its development. Anemia is part of the picture of metabolic acidosis in small immature infants; it is quite conceivable that over this period of time there could be some suppression of bone marrow function. As the hyperpnea of the acidosis becomes more severe, more and more fluid is lost from the body, the baby becomes more and more dehydrated and this further embarrasses the blood volume and the renal blood flow, and one gets into a vicious cycle as dehydration aggravates the acidosis. The picture is very similar to this case.

There are some other findings here in the blood that are very surprising. I think the blood sugar was 97 mg. per cent. This pretty accurately rules out diabetes as the cause of this acidosis. As far as renal causes of the acidosis are concerned, outside of renal immaturity, I would like to consider the TSP of 9.7 Gm. per cent. This is a very high serum protein for an infant of 4 weeks of age, and I think is rather meaningful. What are the things which produce a very high serum protein in a 4 week old baby?—Yes, it is possible to have that degree of dehydration. The child is described on admission to this hospital as being dehydrated with a dry, loose skin with a dusky appearance. I think dehydration is a good possibility. What other diseases would explain a high serum protein? The normal serum protein at 4 weeks is lower than it is in an adult, about 5 Gm. per cent, and the albumin is about 3.5 to 4 Gm. per cent. The elevation here for an infant of this age is probably both in the albumin and globulin component. I'm going to accept this as being the reflection of an extremely severe dehydration. This means that Hgb. of 14.5 Gm. per cent even following transfusion probably means that the actual degree of anemia that would have been seen following adequate hydration would be extremely severe.

There is a terminal episode in this picture. The diarrhea subsided, but the patient became less responsive and was transferred to this hospital, placed in oxygen and received 40 cc. of sodium bicarbonate and 300 cc. of

5 per cent dextrose in water, and after three and a half hours the respirations ceased suddenly with a gasping character and then finally ceased altogether. One observer believes that the heart action persisted for about one-half hour before it, too, ceased. This certainly is a picture that is different from the rest of the illness, which would make me think that something was happening to depress the central nervous system affecting the respiratory center. This might have been a hemorrhage, a subarachnoid or an intracranial hemorrhage. This child who was admitted with a dusky appearance and somewhat anemic could have been suffering from some anoxic damage. This may have represented a picture of dural sinus thrombosis. Of these three, I would think that the child fitted in rather closely to what Ford describes in his textbook as thrombosis of the marantic type in the dural sinuses. This usually occurs in children before the age of 3, typically at about 9 months in the child who has been ill for some time, usually with diarrheal disease with extreme dehydration. There may be a latent period of 3 to 14 days without any symptoms after which time the convulsions and other manifestations of the spread of the thrombosis occur. This child was, judging from the serum proteins, extremely dehydrated and anemic, both of which are contributing to the development of a thrombosis in the superior sagittal sinuses. As far as the metabolic disorder which preceded this is concerned, I think that of the 2 possibilities which present themselves that the first one, metabolic acidosis in an immature infant, is probably pretty well defended. In terms of the treatment received in this hospital, of which we know something, the administration of a relatively large amount of sodium bicarbonate to a child that the people at the time must have thought was in acidosis was appropriate therapy, along with the provision of water and a minimum of electrolytes might have been harmful in only one way. That would be the production of hypocalcemia from too rapid correction of the acidosis. Serum proteins in such high concentrations certainly would lead to a great proportion of the serum calcium being

bound to the protein. The heart action persisted after the child's respirations ceased, and I think this would make unlikely death due to electrolyte imbalance to which the heart is a great deal more sensitive than the respiratory center. I would like to consider, also, the possibility of a congenital lesion as being responsible not only for this child's failure to thrive, but also for the subsequent acidosis. I think that there are a number of things here that make this a little bit difficult—the lack of vomiting which is relatively common in obstructive diseases of the kidney in this age group. I certainly wish we had an NPN on this baby; I would imagine it was quite elevated under the circumstances. The accumulation of urea in itself is not lethal. The children who die in renal failure usually die because of complications due to the accumulation of potassium, the accumulation of phosphorus, hypocalcemia and over a long period of time severe anemia. Since there is no evidence that the cardiac function was adversely affected at the time this child was dying a respiratory death, I would think that this would lead me to suggest that the findings in the kidney were probably not too remarkable, although the presence of the anemia might possibly suggest that renal involvement even over a short period might be present. About the only other objection to making a diagnosis of metabolic acidosis is perhaps the absence of acetone in the urine; this is quite compatible with this concept because the metabolic acids that accumulate are largely lactic acids which do not give a positive test for acetone. Actually, the absence of acetone from the urine is a common finding in children with this degree of metabolic acidosis on the basis of renal immaturity. So I think I will put on the board for a final diagnosis; (1) renal immaturity a functional concept that the Pathologists may not see, with a metabolic acidosis. (2) Dural sinus thrombosis, of the marantic type which, if it followed the usual pattern, would certainly involve the superior sagittal and probably several other cerebral sinuses.

DR. JOHN SHAPIRO: I'm sorry we didn't have an opportunity to examine the central nervous system on this child and we don't

know whether there was sinus thrombosis in the brain or not. I believe, Dr. Woodruff, this is the type situation in which we do frequently find dural sinus thrombosis. The autopsy examination on this child was conspicuous because of the malnutrition which was very prominent clinically, and other features which we'll bring out as we go along. There was, on examination, a moderate degree of bronchopneumonia. There was a significant degree, though not an overwhelming infection, inasmuch as only focal areas in the lung were involved grossly and microscopically. I think that the most striking pathology that we encountered was in the urinary tract and I believe the pictures show the changes well. Note (Fig. 1) the small malformed kidney

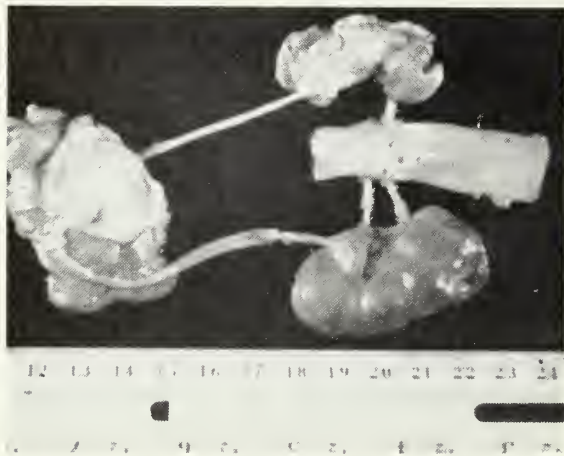


FIGURE 1.

on the left and the rather large one on the right. Cysts are visible on the right beneath the capsule. There is an accessory renal artery on the right. This was of no consequence in this case. We occasionally see such vessels unrelated to ureteral obstruction.

The left kidney exhibits deep scars which serve to distort it greatly. The cut sections of the kidneys (Fig 2) show bilateral marked hydronephrosis and there is little discernible renal parenchyma on the left. Note that there is no increase in the size of the ureters. It was thought that some narrowing existed at the uretero-pelvic junction bilaterally, but complete occlusion was found. The lower urinary tract was normal. Histological sections of the kidneys revealed numerous cysts in each cortex. In some areas the appearance was typical of that we associate with congenital polycystic dis-

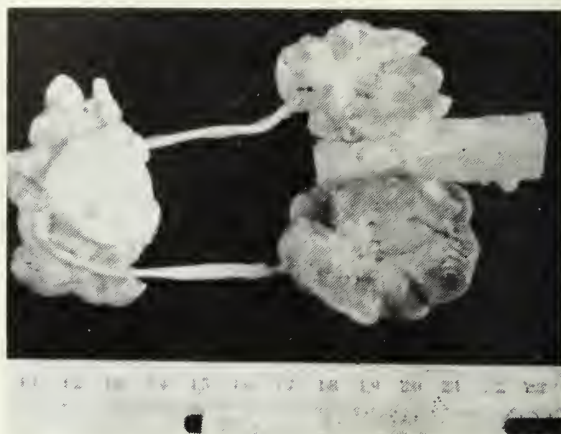


FIGURE 2.

ease in infancy. In other areas the picture suggested obstruction with dilatation of tubules contributing to the cystic formations. I suspect that in this case we have two factors contributing to the renal disease. First, some degree of congenital cystic disease and secondly the effects of partial urinary obstruction due to partial stricture at the ureteropelvic junctions. This latter can also be classified as a congenital lesion. Unfortunately, we did not examine the parathyroid glands in this case; such an examination might have revealed secondary hyperplasia of these organs.

The bone marrow was hyperplastic—probably as a result of the anemia associated with decreased renal function.

Final Diagnoses:

Bilateral cystic disease of the kidneys, congenital.

Bilateral ureteropelvic stricture.

Secondary bilateral hydronephrosis.

DR. WOODRUFF: I probably should have considered this very severe anemia in terms of the dehydration more seriously than I did and was wondering whether or not there was definite pathology or merely immaturity in the renal function. We have a patient of 5 years with terminal nephritis who is dropping from the transfused level of 12 or 13 gms. down to 5 gms. in the course of about 6 weeks. The bone marrow has just about given up, as an illustration of what the effects of uremia, in an older patient at least, can be in terms of depressing the functions of the bone marrow. This acidosis must have been present in this child almost from the moment of birth.

1. Jaudon, J. C.: Further Observations Concerning Hypofunction of the Adrenals During Early Life, *J. Pediat.* 32:641, 1948.

President's Letter

TRY TO KNOW YOUR STATE ASSOCIATION BETTER



J. PAUL BAIRD

unless you have had the privilege of serving your association as a Councilor, in all probability you would not be able to do so at all.

By Constitutional rights your Council is established as an important department of the State organization and by definition it shall "have regular meetings" or on special occasions of necessity called meetings by "the Chairman or on petition of three Councilors." The Constitution provides for an elected Councilor from each Congressional District and in his district the Councilor "shall be an organizer, peacemaker and censor" and taken collectively "the Council is the Board of Censors of the Association, and it shall hear and decide all questions of discipline affecting the conduct of members, or of a Component Society upon which an appeal is taken from the decision of an individual Councilor." These are the Constitutional rights granted the Council but its power is derived more from tradition, custom, and implied privileges of action, in the pursuit of principles of conduct embodied in every Oath subscribed to by physicians.

Anyone charged with, or upon whom any action has been taken, on moral, ethical, or illegal grounds may appeal to the Council for a fair hearing and review of the evidence in any action initiated by the Component Society. The Council is vested with broad power to sustain or disapprove of such action and its opinion makes it official and binding for the State Association. When the Council is in session for consideration of

any of these delicate matters the Attorney for the Association, Mr. Charles Cornelius, usually is present to advise the Council of its rights and limitations.

But beyond its Constitutional and implied powers the Council has a great force in the background of moral suasion. After discussing evidence, sifting charges, and excluding rancor and petty motives, the Council may limit itself to some recommendation, suggest further discussion and review, defer action, or establish itself as a Board of Critique. Hence its conclusions, opinions and recommendations, are an influential force in the preservation of the individual's right in the organization, and upholds the organization's rights to keep the individual in conformity to principles. The Council also functions in the capacity of an arbitrator in disputes between Component Societies and between these groups and the State Association.

Thus the Council, which has members elected for lengthy terms providing for stability and conservatism, actually is a Supreme Court and functions in a similar manner. The discussions are rarely made public, its hearings attract no press notices, and members of the Association rarely know of its findings, problems or recommendations. But when these problems do arise the very fact that this department can keep issues under discussion, reviewing, searching for facts, and as a body render a decision or make a recommendation affecting an individual's professional career, makes it a highly important part of the machinery of your Association. It would seem the better part of wisdom to know the purpose of the very existence of the Council and to become further acquainted with its function, and in so doing, know your State Organization better.

Paul Baird

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JUNE, 1957

EDITORIAL

PREVENTION OF VIRAL HEPATITIS

The prevalence of viral hepatitis has increased greatly throughout the United States in recent years. Although better reporting and more accurate diagnostic procedures account for some of the increase, the actual number of patients with viral hepatitis is now greater. The disease known as serum hepatitis began to be recognized during World War II following the use of plasma for battle casualties. The use of blood and blood products has continued since that time. The relationship of serum hepatitis to infectious hepatitis has not been determined definitely, but they are both highly infective, easily transmissible, and believed to be caused by viruses.

With the more extensive use of whole blood the danger of transmission by pooled plasma has decreased but there are undoubtedly many accidental infections among personnel engaged in the medical and allied

professions such as physicians, dentists, nurses, technicians, medical students and interns. In this group viral hepatitis represents an occupational hazard. The blood donor as well as the blood recipient may become infected.

The transmission of serum hepatitis may be accomplished not only in the course of a transfusion but also when a contaminated needle is used in drawing blood or used in any kind of injection. Inadequately sterilized needles, syringes and blood-letting lancets may transmit the infection.

Various reports in the medical literature emphasize certain sources of infection. There have been cases of viral hepatitis traced to tattooing with unsterilized needles, infections in diabetics using unsterilized syringes, epidemics traced to unsatisfactorily sterilized lancets and blood-letting devices, and the possibility of transmission through a razor cut in a barber shop. It seems feasible that transmission may be facilitated by the rectal thermometer used in a case of viral hepatitis.

According to some workers 0.2 to 0.5 per cent of the general population have the virus of hepatitis in their blood. At present there is no reliable method of detecting these carriers. All patients who have, or who have had jaundice or infectious hepatitis are rejected as blood donors. However, many persons apparently can harbor the virus without developing clinical symptoms of the disease. Since man is the only animal which can be infected with the virus of serum hepatitis, the detection of the carrier state is impossible without the use of human volunteers. This method is, of course, not practical.

Our knowledge of the disease is so limited that preventive measures are inadequate. It is known that the virus is easily transmissible and difficult to inactivate. Probably most important is the prompt washing and sterilization of needles, syringes, lancets and blood-letting devices. Even a small drop of dried blood may contain live virus. Instruments used for any type of injection may act as the agents for transmitting the disease. Disposable needles and lancets are useful in avoiding contamination.

If a sufficient amount of heat is used over

a long period of time, the virus of hepatitis can be inactivated. The Sanitary Code of New York City regulations governing blood donors and blood banks require that sterilization "shall be by autoclaving for 30 minutes at 121.5° C (15 lb. pressure), by dry heat for 2 hours at 170° C, or by boiling in water for 30 minutes."

A practical method of decreasing cases of viral hepatitis is the elimination of all unnecessary blood transfusions. Irradiation of pooled plasma with ultraviolet rays or storage at room temperature for 6 months have been suggested as means of destroying the virus of serum hepatitis, but the efficacy of both methods has been questioned.

Prevention of infectious hepatitis requires personal-hygienic precautions as well as those recommended for the prevention of serum hepatitis. Since it is usually difficult to distinguish the two forms clinically, it is advisable to exercise the same precautions against the spread of both.

The Committee on Public Health of The New York Academy of Medicine has made the following recommendations¹ to help reduce the incidence of viral hepatitis.

First: Physicians should be impressed with the fact that viral hepatitis is a reportable disease.

Second: Physicians should avoid transfusions whenever possible in view of the present inability to detect carriers of viral hepatitis.

Third: Blood donors should be selected with extreme caution to screen out those with a history or other evidence of hepatitis.

Fourth: Instruments should be sterilized by boiling for 30 minutes, dry heat for 2 hours, or by autoclaving for 30 minutes at 15 lbs. pressure. Blood-letting objects and lancets are not adequately sterilized by immersion in alcohol. Disposable lancets and needles are available.

Fifth: Physicians, dentists, interns, nurses and technicians are constantly exposed to this occupational hazard; they should therefore be constantly on guard and maintain isolation technic in the examination and

management of patients with viral hepatitis.

We as physicians are called on to cure disease. Let us not through thoughtlessness or carelessness induce disease. Constant attention to these principles enumerated by this Committee will do much toward decreasing the incidence of a dread disease.

A. S.



DR. C. M. HAMILTON

An important function of a state journal is to record current events which have medical interest peculiar to this state. The JOURNAL should provide the source material for the historian of Tennessee medicine at some future date.

History is but a distillate of the lives, thoughts, and actions of men. This is as true in the history of a small and limited group as in that of peoples of nations or the world. It is my duty then to acknowledge the many hours which were unselfishly given for many years to the affairs of organized medicine by Dr. C. M. Hamilton. His well considered judgments and wise counsel influenced the actions of committees, the House of Delegates and thus organized medicine. In this fashion he made history not only in the Tennessee State Medical Association but also in the Nashville Academy of Medicine.

The contributions of Dr. Hamilton to organized medicine were in the capacity of president and as a member of the Board of Directors of the Nashville Academy of Medicine. In the state organization he served as a member of the House of Delegates, as President in 1946, and as Chairman of the Committee on Health and Legislation for years. Here is where his counsel contributed much to the welfare of the public. For a goodly number of years he represented the Tennessee State Medical Association in the House of Delegates of the A.M.A. and thus played his part on a national level.

Thus this man must be recognized by these few words most inadequate in the acknowledgment of all he gave in true sincerity and without thought of personal gain. The details of his contributions are recorded in the minutes of committees, House of Delegates and the like.

One cannot refrain from considering an-

¹Prevention of Viral Hepatitis, A Report by the Committee on Public Health of the New York Academy of Medicine. Bull. New York Acad. Med. 33:128, 1957.

other facet of this man of organized medicine. His sincerity and contributions in the purely professional field are attested to in hospital staff activities and in his interest in teaching. For many years he was a dedicated clinical teacher of dermatology at both Vanderbilt University School of Medicine, his Alma Mater, where he had the honor of being the Founder's Medalist of his class, and at Meharry Medical College. As a personal note your Editor recalls the pleasant and worthwhile consultations on patients, and exchanges of experiences while working with Dr. Hamilton for two decades in the Medical Outpatient Service at Vanderbilt University Hospital.

R. H. K.

DEATHS

Dr. William Bedford Campbell, 76, Cleveland, died April 14th. Dr. Campbell was Cleveland's oldest retired physician.

Dr. Basil S. Mayo, 74, Dresden, died April 20 at the Kennedy Veterans Hospital in Memphis.

Dr. Luther K. Hawk, Chattanooga, died April 28th at his home.

Dr. Rhea E. Garrett, 70, Hartsville, died May 8 at Vanderbilt Hospital in Nashville.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Chattanooga-Hamilton County Medical Society

The Society met for a buffet supper on May 2 at the Chattanooga Golf and Country Club. The guest speaker was Dr. Rollin A. Daniel, Jr., of Nashville.

The May 16 meeting of the society consisted of the annual outing and barbecue held at the Chattanooga Rod and Gun Club.

Nashville Academy of Medicine and Davidson County Medical Society

The regular monthly meeting was held on May 14 with a dinner at Vanderbilt University Hospital Cafeteria. The program consisted of a discussion on Medical Ethics and Grievances. Medical ethics including frequent problems confronting physicians, the interpretation of the Code of Ethics,

responsibilities to patients, colleagues and the profession at large, and medical manners in border-line cases were discussed by Dr. N. S. Shofner. The Grievance phase of the program dealt with the most common causes of complaints, how to deal with grievance cases, the role of diplomacy and public relations, and the matter of fees was presented by Dr. Robert N. Buchanan, Jr.

Roane County Medical Society

The Society met for dinner at the Oak Ridge Hospital on May 28. Dr. Arthur J. Vorwald, Professor and Chairman of Industrial Medicine and Hygiene at Wayne State University, Detroit, Michigan, was the speaker. His subject was "Atmospheric Pollutants and Pulmonary Disease."

Knoxville Academy of Medicine

The Society conducted its regular meeting on May 14 in the Knoxville Academy of Medicine building. The program consisted of an interesting case report given by Drs. George T. Novinger and Lucian W. Trent. Guest speaker was Mr. H. H. McCampbell, a member of the Knoxville Bar Association, who spoke in celebration of "Know Your Courts and Liberties Week." Dr. John R. Smoot spoke on "Dermabrasion" and discussion of this subject was led by Dr. A. H. Lancaster.

As part of the Society's centennial observance, an all-day meeting was conducted at the Deane Hill Country Club on May 16. The meeting was sponsored by Lederle Laboratories. Dr. B. M. Overholt moderated the morning session and Dr. George Inge moderated the afternoon session. The program was as follows:

Cardiac Emergencies—R. Bruce Logue, M.D., Associate Professor of Medicine, Emory University School of Medicine, Emory, Georgia
 Emergencies in the New Born—James G. Hughes, M.D., Professor of Pediatrics, University of Tennessee School of Medicine, Memphis
 Differential Diagnosis of Coma—Edward L. Bortz, M.D., Chief, Medical Service, The Lankenau Hospital, Philadelphia, Pennsylvania
 Emergencies of the Third Trimester of Pregnancy—M. Edward Davis, M.D., Professor of Obstetrics and Gynecology, University of Chicago School of Medicine, Chicago, Illinois
 Panel on Acute Surgical Emergencies of the Chest, Abdomen and Head—Thomas H. Burford, M.D., Professor and Chief of Thoracic Surgery, Wash-

ington University School of Medicine, St. Louis, Missouri; J. Garrott Allen, M.D., Professor of Surgery, University of Chicago School of Medicine, Chicago, Illinois; and Donald D. Matson, M.D., Assistant Professor of Surgery, Harvard Medical School, Boston, Massachusetts

Question and panel discussions were held at the conclusion of the morning and afternoon sessions. Dr. J. Gilbert Eblen, President of the Society, was Chairman of arrangements.

Memphis-Shelby County Medical Society

Members of the Memphis-Shelby County Medical Society and the Memphis and Shelby County Bar Association met jointly for a dinner meeting on April 30th. A film entitled "The Medical Witness" recently prepared by the American Bar Association and the American Medical Association was shown. The meeting was held at the Hotel King Cotton.

On May 7, the society met in the Institute of Pathology building where Dr. J. J. McCaughan, Jr. spoke on "Surgical Treatment of Occlusive Arterial Disease and Aneurysms."

Consolidated Medical Assembly

The Society met in the New Southern Hotel on May 7. Dr. Duval H. Koonce gave a paper entitled "Medical Management of Urinary Tract Infections." Dr. Oliver H. Graves also presented a paper entitled "Surgical Management of Urinary Tract Infections." The scientific papers followed the regular dinner meeting.

NATIONAL NEWS

Washington News

Again the Jenkins-Keogh plan is up for consideration in Congress. While there is no assurance it will be passed, or even get out of the House Ways and Means Committee, many sponsors of the legislation this year are united in one organization and are making themselves felt on Capitol Hill.

Briefly, this bill would allow any self-employed person to put a limited portion of his income into a retirement fund without paying income taxes on the money. Taxes would be paid when the money was received as pension or retirement.

Sponsors of the Jenkins-Keogh plan point out

that it very definitely is not legislation to give a special tax advantage to one group of people. For one thing, every self-employed person would be eligible, from farmers to doctors and from opera singers to architects. For another, corporations since 1942 have been allowed to put money into retirement funds for their employees without payment of federal taxes on the money; the self-employed merely want the same consideration.

At various times the American Medical Association has led in the campaign for enactment of legislation of this type. Two years ago the House Ways and Means Committee voted to report it out, as part of a broader tax bill, but the committee never actually got around to sending the combined bill to the House floor.

Now the lead is being taken by a newly-formed American Thrift Assembly, or officially the American Thrift Assembly for Ten Million Self-Employed. In addition to the AMA, the new group has the support of American Dental Association, American Bar Association, and a score or more of other national organizations that represent the self-employed.

After the Congressional session was well under way, the ATA surveyed the political-legislative climate and found it favorable for Jenkins-Keogh. Then in early May the assembly asked its constituent associations to go to work. They were urged to have all members contact the House Ways and Means Committee with requests that the Jenkins-Keogh bill be reported favorably to the House floor. Assembly strategists are confident that if the committee hears from enough of the people who would be affected, it will approve the bill before adjournment. Then, if there isn't time for House action this year, that step can come next year.

Economy has been the main obstacle in the path of Jenkins-Keogh—the fear on the part of the Treasury Department that passage of the bill would mean a serious loss of income tax revenue. However, the Treasury has never denied that the bill is justified to equalize tax status for the self-employed in relation to corporation employees.

Answering the economy argument, the Assembly makes two points: First, the set aside funds, invested in the country's economy, would stimulate business and develop far more in new income tax payments than it would cost. Second, because the self-employed who retain their health rarely retire at any arbitrary age, many of them in the years past 65 would remain in a tax bracket not significantly lower than when they paid into the retirement fund. (From the Washington office of A.M.A.)

U. S. Spends \$15.17 Annually For Each Citizen's Health

In analyzing the federal medical budget for the current year, the American Medical Association's Washington office found that the government is spending an average of \$15.17 per man, woman

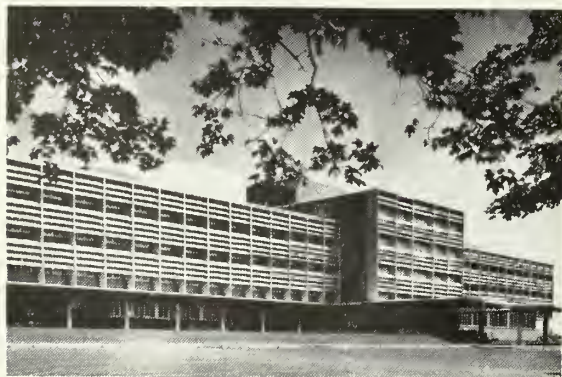
and child for care in the health field alone. If only wage-earners are considered, they will be paying an average of \$32.72 each to finance the government's health-medical operations, and the average family will be paying \$54.61 for the same services this year. The total expenditures for health is a billion dollars more than the cost of running the Department of Commerce, half a billion more than all Department of Agriculture expenses, and six times the Department of the Interior's budget. For the first time since World War II, medical costs of the Veterans Administration top the list, passing the Defense Department. A close third is the Department of Health, Education, and Welfare.

Social Security

The Bureau of Old Age and Survivors Insurance is working on setting up standards for determining disability that would enable non-medical men to determine if, (1) disability qualifies applicant for OASI payments at age 50, and (2) qualifies him for freeze which protects against reduction of pension because of time he was disabled and unable to contribute to OASI. Bureau seeks system where non-medical men could determine eligibility by matching physician-certified physical conditions against OASI standards.

MEDICAL NEWS IN TENNESSEE

Dedication of the Dr. O. S. Hauk Building



The South's newest and most modern intensive treatment center will be dedicated at Central State Hospital in Nashville, June 30. It is being named in honor of Dr. O. S. Hauk, Superintendent of Central State Hospital and veteran administrator of mental health facilities in Tennessee.

The dedication ceremonies will begin at 2:30 p.m., following an initial registration at 1:00 p.m. The program is as follows:—

Invocation—Oscar Schwarzenberg, President, Board of Trustees

Welcome—A. Lawrence White, M.D., Assistant Superintendent, Central State Hospital and Chairman, Dedication Ceremony

Introductions—C. J. Ruilmann, M.D., Commissioner, Tennessee Department of Mental Health

Greetings—

Harry Solomon, M.D., President, American Psychiatric Association

Daniel Blain, M.D., Director, American Psychiatric Association

William McCullagh, M.D., President, Southern Psychiatric Association

Frank H. Luton, M.D., Tennessee Psychiatric Association

W. O. Vaughan, M.D., President, Nashville Academy of Medicine

Dedictory Address—Honorable Frank G. Clement, Governor, State of Tennessee

Presentation of Keys—Warren W. Taylor, Taylor and Crabtree Architects

Acceptance of Keys—O. S. Hauk, M.D., Superintendent, Central State Hospital

Benediction—Dr. Walter Courtenay, First Presbyterian Church, Nashville

The program will include a tour of the 256 bed building, which is planned as the diagnostic and treatment center for the entire hospital. It will provide the very latest equipment for laboratory diagnosis, general medical and surgical care, for research of various kinds, as well as for the most modern psychiatric treatment. Incoming patients will be received in this building and be provided immediate diagnostic attention from the full competent psychiatric team, followed by intensive treatment aimed at recovery in the shortest possible time.

Governor Clement and Dr. Ruilmann, Commissioner of Mental Health, join in an invitation to every member of the medical profession to attend and participate in the ceremonies as another milestone along the road from custodial care to actual medical treatment for every patient in Tennessee's state mental hospitals.

Tennessee Chapter of the American College of Chest Physicians

A new society, the Tennessee Chapter of the American College of Chest Physicians was organized in Nashville on April 9, 1957, during the annual meeting of the Tennessee State Medical Association. Officers elected for the coming year are: Dr. Leland M. Johnston of Jackson, President; Dr. James

J. Callaway, Nashville, Vice-President; and Dr. Wilder W. Hubbard of Nashville, Secretary-Treasurer.

Davidson County to Require Polio Vaccination

An order requiring polio vaccination for attendance at public or private schools in Davidson county has been adopted by the Davidson County Board of Health. The order, which also requires immunization against tetanus and whooping cough, is believed the first in the nation to make polio vaccination a prerequisite to school enrollment. The action, which takes effect immediately, applies to day nurseries, nursery schools and similar agencies as well as public, private and parochial schools.

Memphis Obstetrical-Gynecological Society

Dr. A. N. Arneson, clinical professor of gynecology at Washington University, St. Louis, was the guest speaker on May 7 at the meeting of the Memphis Obstetrical-Gynecological Society. He gave three talks, —the first on "Discussion of Problem Cases," and the second on "Adenocarcinoma of the Endometrium." He was honored with a luncheon at the University Center, and addressed a meeting of the Memphis society following dinner at the University Club, on the topic of "Carcinoma of the Cervix." A number of physicians from the Nashville Obstetrical-Gynecological Society were guests of the Memphis group for the dinner meeting.

Piedmont Orthopedic Society

Some 35 members of the Piedmont Orthopedic Society, representing 15 states, met in Memphis on April 26 for a two-day session. The meetings were conducted at the Campbell Clinic, Kennedy Hospital and Crippled Children's Hospital.

Tennessee Schools Receive Final Grant Awards

Vanderbilt University Medical School and Meharry Medical School have received checks totaling \$2,500,000, the Ford Foundation recently announced. Vanderbilt received \$1,800,000 and Meharry \$700,000. The money is the final grant awards in the

Foundation's \$90 million program to strengthen instruction in the 45 private medical schools in the United States. Early last year, 19 colleges and 45 hospitals in Tennessee were awarded \$6,521,700 in Ford Grants. Vanderbilt received the largest grant in the state—\$1,249,600. The college grants were for increasing teacher salaries and other pressing needs.

University of Tennessee College of Medicine

The University of Tennessee College of Medicine has been given a \$14,080 grant for heart research according to the Life Insurance Medical Research Fund. The grant is for research by Dr. D. B. Zilversmit on the role of phospholipides in the mobilization of arterial lipides. The University of Tennessee project is one of 66 heart research programs supported by the fund in the U. S., Canada and Mexico. The fund is supported by 146 insurance companies.

Middle Tennessee Medical Association

The one hundred twenty-fifth semiannual meeting was held at Tullahoma, on May 16, under the presidency of Dr. W. H. Andrews, of Sparta. The following program was presented:

"Some Medical Aspects of Renal Insufficiency"—

Dr. Fred Goldner, Nashville

"A Ten-Year Experience With Vagotomy and Conservative Gastric Resection for the Treatment of Duodenal Ulcer"—Dr. J. Lynwood Herrington, Jr., Nashville

"Chronic Posterior Urethritis in the Female"—Dr. John M. Tudor, Nashville

"Diagnosis and Management of the Ruptured Intervertebral Disc"—Dr. Joc M. Capps, Nashville

"The Significance of Masses in the Neck"—Dr. Louis Rosenfeld, Nashville

"Intestinal Obstruction"—Dr. George Duncan, Nashville

"Recent Advances in X-ray Study of the Gallbladder"—Dr. M. D. Ingram, Jr., Nashville

PERSONAL NEWS

Dr. Fay B. Murphy, Jr., Chattanooga, recently gave a paper before the Kentucky Chapter of the American Academy of General Practice at its Sixth Annual Scientific Assembly held in Louisville, Kentucky. The title of his paper was "Allergy, Hypersensitivity and Connective Tissue Diseases."

Dr. Philip H. Livingston, Chattanooga, has been named to membership on the National Council of the National Planning Association.

Dr. Floyd E. May and **Dr. W. Joyce May**, Elizabethton, have joined the staff of the Franklin Clinic for the practice of medicine.

Dr. John M. Jackson, Springfield, was the subject of a special article appearing in the *Nashville Tennessean*.

Dr. John P. Carter, Chattanooga, recently addressed the American Operating Room Nurses at Memorial Hospital. His subject was "Heart Surgery."

Dr. Beverly Douglas and **Dr. George Meneely**, Nashville, addressed the American Association of Plastic Surgeons on May 10 in Pennsylvania.

Dr. H. James Crecraft, Nashville, addressed the members of the Jackson Mental Health Association on April 23.

Dr. Charles W. Miller, Memphis, was Chairman of the Mental Health Week committee activities sponsored by the Memphis-Shelby County Mental Health Society. The following Memphis physicians composed the forum speakers on mental health conducted at the Ellis auditorium on April 30:—**Drs. John D. Hughes, Frank A. Latham, Dick C. McCool, Samuel Paster, Carrol C. Turner** and **William J. von Lackum**.

Dr. K. J. Phelps, Lewisburg, has moved his offices to the location of Third Avenue, North and Church Street in Lewisburg.

Dr. R. B. Wood, Knoxville, and **Dr. J. Q. Early**, Bristol, recently addressed the Medical Assistants Society of Tennessee at their second annual convention in Bristol.

Dr. Gus J. Prosch has announced the opening of his office for the practice of medicine in Brentwood.

Dr. Jane H. Koll, Oak Ridge, has announced the closing of her practice for the purpose of moving to Fond du Lac, Wisconsin.

Cooperating in the program of Cancer Control Month, **Drs. Carroll Long, J. J. Range** and **Ben Hall**, all of Johnson City, appeared in a panel discussion in behalf of the Washington County Chapter of the American Cancer Society.

Dr. John P. Crews, Oak Ridge, has been named county coroner for Anderson County.

Dr. John P. Lindsay, Nashville, has been named President-Elect of the Tennessee Academy of General Practice. **Dr. Arthur W. Green** of Memphis is Vice-President and **Dr. Irving R. Hillard** of Nashville, Secretary-Treasurer. **Dr. Kenneth L. Haile** of Cookeville and **Dr. John C. Thornton** of Brownsville were named delegate and alternate delegate to the American Academy of General Practice.

Dr. Robert Eugene Bratton, Hartsville, has been honored by the Hartsville Lions Club for his more than 55 years of practice in the community.

Dr. Harmon L. Monroe, Erwin, has been honored for his service to the Unicoi County Selective Service Board.

Dr. Andrew H. Miller has joined **Dr. Samuel B. Prevo** in the practice of orthopaedic surgery, in Nashville.

Dr. Fay B. Murphy, Jr., Chattanooga, and **Dr. Lawrence L. Gompertz**, of Memphis, were elevated to Fellowship in the American College of Physicians, at the recent meeting in Boston. **Doctors Irwin B. Eskind** and **Herbert J. Schulman**, Nashville, were elected as Associates.

ANNOUNCEMENTS

Upper Cumberland Medical Society

The Upper Cumberland Medical Society will hold its yearly scientific meeting at Red Boiling Springs on June 25-26. This is one of the principal meetings for the physicians in the area and an excellent scientific program has been arranged.

Rocky Mountain Cancer Conference

The meeting that has proven popular with doctors in this area for several years is the Rocky Mountain Cancer Conference which will meet in Denver, Colorado on July 10-11. An interesting two-day program has been arranged. For additional information contact **John S. Bouslog, M.D.**, Chairman, Cancer Conference Committee, 835 Republic Building, Denver 2, Colorado. Headquarters will be in the Shirley-Savoy Hotel.

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Thrombo-embolism touches every field of medicine and surgery. Though much more is to be learned regarding the pathogenesis, diagnosis and treatment of these phenomena remarkable advances have been made in the recent past in the fields of anticoagulant therapy and in vascular surgery.

Symposium: Thrombo-Embolic Disease and Its Management*

LAMB B. MYHR, M.D.,† Jackson, Tenn.

Introduction

The management of thrombo-embolic disease and its many manifestations constitutes a major problem in every day practice. The acute problems related to the vascular system, other than those which are the result of trauma, all arise from some form of intravascular clotting. The clot may produce the acute disease as a thrombus at the site of origin or may detach itself from its primary focus and become an embolus to produce the acute symptoms elsewhere in the vascular system. Thrombi may arise in an arterial site either in the pulmonary arterial tree or the systemic system. There is in almost every instance some underlying arterial pathologic process such as arteriosclerosis. Thrombi also may arise centrally within the heart or within the aorta and, in becoming detached, become emboli within the systemic arterial tree or within the lung. When a clot arises within the heart, the most common recognizable underlying lesion is myocardial infarction or auricular fibrillation.

Thrombi which develop in the venous system give rise to acute disease by the acute local changes they produce and also by detaching themselves to travel the venous channels to the heart and thence to lodge within the pulmonary arterial system.

During the past fifty years the problem

of thrombo-embolism has engaged the interest of the medical profession in all parts of the world. While considerable additional knowledge concerning this subject has been provided, the fact remains that there is still considerable difference of opinion and confusion concerning the diagnosis and treatment of the manifestations of venous thrombosis and its complications. There is certainly a wide discrepancy and great variability in the reported incidence of thrombo-embolism, in the concepts of its pathogenesis, in the description of the clinical picture, and, especially, in the measures proposed for its prevention and treatment. The most important factors contributing to the state of confusion regarding this problem are lack of precise knowledge about the etiology and pathogenesis of the disease, its protean clinical and pathologic manifestations, and especially the difficulties in establishing an accurate diagnosis.

The development and use of anticoagulant drugs in the management of coronary disease and other manifestations of thrombo-embolic disease has probably been the greatest single advancement in the treatment of thrombo-embolic problems in the past fifty years. The postoperative use of anticoagulants as a routine measure in some hospitals has contributed to a significant decrease in the incidence of thrombo-embolism. In the surgical field the use of sympathetic blocks and vena cava ligations in selective cases has been of considerable value. In diseases of the central nervous

*Read before the Meeting of the Tennessee State Medical Association, April 8, 1957, Nashville, Tenn.

†From the Jackson Clinic, Jackson, Tenn.

system, anticoagulants have been used to retard the progression of cerebral thrombosis and embolism and the prevention of subsequent attacks. Cervical sympathetic blocks have also been a valuable adjunct to treatment. In spite of these advances, however, there is considerable research yet to be done in this field. Obviously, what has long been badly needed is a reliable test for the presence of venous thrombosis

or, better yet, incipient venous thrombosis. The tests that have been proposed for determining the presence of venous thrombosis as well as for the prediction of its occurrence have not proved satisfactory.

We are most fortunate today in having four speakers on this program who are very well qualified in their respective fields of medicine and surgery.

ANTICOAGULANTS IN VENOUS THROMBOSIS OF LOWER EXTREMITIES*

DOUGLAS H. RIDDELL, M.D., Nashville, Tenn.

The etiology of venous thrombosis sometimes remains obscure although venous stasis, increased coagulability of the blood, infection, or trauma are responsible in most instances. Venous clotting because of stasis and increased coagulability has been termed phlebothrombosis. Few signs and symptoms accompany this so-called "bland" thrombus so that frequently the first indication of its existence is pulmonary infarction.

Thrombophlebitis, on the other hand, implies an inflammatory process in and around the wall of the vein which may be due to the,—(1) end result of phlebothrombosis, (2) trauma, (3) bacteria, or (4) the introduction of chemicals. Each produces inflammation with pain, fever, edema, erythema, and disability of the extremity. Thrombophlebitis in the superficial veins of the lower extremities may be considered to be a separate entity from deep thrombophlebitis. The inflammatory process that occurs in the veins of the superficial or saphenous systems is caused by varicose veins predisposing to venous stasis or due to an infected varicose ulcer.

The role of anticoagulants in the treatment of venous thrombosis remains somewhat controversial. By keeping the above categories of venous thrombosis in mind, a general policy as to therapy may be formulated more easily, particularly as it pertains to anticoagulants.

If there is a strong suspicion of early phlebothrombosis it is my feeling that ab-

solute bedrest, elevation of the lower extremities, application of a circular bandage to both extremities from the toes to the thigh, and the administration of an antibiotic and an anticoagulant offer the patient the best chance of an early recovery. If the process has progressed to a mild or to a definite deep thrombophlebitis with a painful, edematous, warm, and discolored extremity, it has been my policy to rely upon bedrest, elevation of the lower extremities, and antibiotics *without* the employment of anticoagulants. Paravertebral sympathectomy block with Xylocaine may be done in certain cases that exhibit signs of venospasm and pain. If the thrombophlebitis is unilateral it is wise to wrap the normal leg with an elastic bandage in an attempt to prevent bilateral disease. Intramuscular trypsin in the form of Parzenzyme has shown some promise in hastening the subsidence of the inflammatory process but this is frequently difficult to evaluate.

Superficial thrombophlebitis may be controlled usually by therapy directed toward control of infection such as elevation, application of heat, and antibiotics. Cellulitis of the soft tissue surrounding the saphenous veins will subside and seldom are anticoagulants necessary to control a propagating thrombus in this condition.

When pulmonary embolism complicates venous thrombosis, there is a true indication for anticoagulant use. A definite or clear-cut diagnosis of embolism is not necessary to initiate treatment. A suspected or presumptive diagnosis of pulmonary embolism is enough to dictate immediate anticoagulant therapy. If anticoagulants are

*Read before the Meeting of the Tennessee State Medical Association, April 8, 1957, Nashville, Tenn.

contraindicated, such as in renal or hepatic disease or extensive and denuding operative procedures, then ligation of the inferior vena cava must be considered.

The final condition in which anticoagulants are indicated is recurrent thrombophlebitis occurring after apparent subsidence of the initial episode. If one considers the primary episode of thrombophlebitis adequately treated and the symptoms recur during or after rehabilitation of the patient, one is justified in using anticoagulants for long term therapy over a 10 to 12 weeks period.

Heparin and Dicumarol have been used more frequently than other anticoagulants. Each has its particular advantage. In pulmonary embolism or in rapidly ascending phlebothrombosis, it is considered safer to institute heparinization immediately and to follow with Dicumarol. After a prothrombin level of less than 25 per cent of normal is attained in 3 to 5 days, the heparin may be discontinued. If pulmonary embolism recurs during *adequate* heparin or Dicumarol therapy, an indication for ligation of

the vena cava may exist. The apparent mode of action with anticoagulants is intriguing. I prefer to think of a propagating thrombosis occurring in a segmental fashion with the bland clot forming rapidly between each venous tributary or segment. Anticoagulants apparently arrest this propagation at the junction of a large tributary and the main venous channel and prevent a *new* bland thrombus from forming. Since the friable bland thrombus is the dangerous type, the arrest of this propagation is effective in preventing further embolization. Anticoagulant therapy is not adequate unless the three tube Lee-White clotting time is kept in excess of 20 minutes or the prothrombin time is less than 25 per cent of the control.

In *summary*, anticoagulants have a definite place in the treatment of venous thrombosis and its complications. The best use appears to be in the bland friable thrombus of phlebothrombosis, in recurrent thrombophlebitis and in pulmonary embolism, however, *prevention* of these conditions continues to be our best weapon.

VENA CAVA LIGATION IN THROMBO-EMBOLIC DISEASES*

BRUCE R. McCAMPBELL, M.D., Knoxville, Tenn.

The purpose of my presentation today is to trace briefly the evolution of ligation of the inferior vena cava in thrombo-embolic disease, define the indications for its use, and to point out some of the sequelae which may be expected.

Prior to 1934, when Homans⁶ first described the operative treatment of thrombo-embolic disease by ligation of the superficial femoral veins, the treatment of this disease was primarily limited to physical means such as elevation, warm compresses and bed rest. During this period, about one patient in five with thrombophlebitis died of pulmonary embolism;⁹ about 6 per cent of surgical deaths were due to pulmonary embolism;¹³ There was, indeed, need to improve upon these results. Homans' operation, therefore, was enthusiastically received by surgeons and internists alike and was

widely used for a full decade or more. However, after analysis of several series of cases, it was found that not only were the postoperative deaths from pulmonary embolism increasing, but also that many patients died of pulmonary embolism in spite of ligation of the superficial femoral veins.^{1, 3, 7, 14}

The discovery of Dicumarol by Link in 1943, as well as the greater availability of heparin, opened the way for the extensive use of anticoagulants in the treatment of thrombo-embolic disease. The results of this form of treatment have been very encouraging. Prior to the use of anticoagulants 18 per cent of the patients having one nonfatal embolism subsequently had a fatal episode. These patients also had a 33 per cent chance of having another nonfatal embolism.⁹ Allen and associates¹⁰ reported their experience with 329 cases of nonfatal pulmonary embolism treated with Dicumarol. They found that only 3 had a second

*Read before the Meeting of the Tennessee State Medical Association, April 8, 1957, Nashville, Tenn.

episode and none of these were fatal while on anticoagulant therapy.

Indications

As ligation of the superficial femoral veins in the management of thrombo-embolic disease became less popular, it became evident that there were some instances where ligation of the vein proximal to the thrombus was desirable. The logical place for such interruption was the inferior vena cava. Thus, the thrombus which often extends up to the origin of the vena cava could be controlled, and, at the same time, emboli arising in the pelvic veins or in the opposite leg could be eliminated. The technical problems in ligating the inferior vena cava are not great and the operation would be ideal except for the late sequelae encountered following the use of this procedure. In view of these ill effects rather strict indications should be formulated and adhered to in order to save lives when possible but not to inflict permanent disability upon patients without good reason. We may then outline the indications for ligation of the inferior vena cava in thrombo-embolic disease as follows:

1. Repeated embolism in spite of adequate anticoagulant therapy.
2. Pulmonary embolism in patients in whom anticoagulants cannot be used for reasons such as:
 - a. Intolerance of drugs.
 - b. Certain preoperative or postoperative cases.
 - c. Antepartum or postpartum cases.
 - d. Blood dyscrasias.
 - e. Severe liver and renal damage.
3. Pulmonary embolism in septic thrombophlebitis.
4. Rapid proximal extension of thrombosis in phlegmasia cerulea dolens.

A few patients will have repeated emboli in spite of adequate anticoagulant therapy. Many of these patients have no clinical evidence of thrombophlebitis until embolism occurs. Crutcher and Daniel¹¹ found that only 11 of 55 patients dying of pulmonary embolism showed clinical signs of thrombophlebitis. Therefore, if a patient survives an embolism, treatment with anticoagulants should be instituted; and if another em-

bolism occurs, ligation of the vena cava is then indicated.

Anticoagulants cannot be given to patients upon whom intracranial or spinal cord operations have been done or are mandatory. If such patients have a nonfatal embolism, they should be subjected to inferior vena cava ligation without delay. Anticoagulants are considered contraindicated in certain other postoperative conditions such as after transurethral or abdominoperineal resection of the prostate, and in the presence of large open wounds. During the Korean War we did not hesitate to use heparin, when necessary, in patients with extensively debrided and open wounds. No serious bleeding was encountered in these patients. If trouble does develop, the effect of heparin can be rapidly controlled by the use of protamine sulfate, and the effect of Dicumarol by the intravenous use of vitamin K₁ in doses of 50 to 150 mg.

While the use of anticoagulants in antepartum and postpartum cases is considered contraindicated by some authors, others do not hesitate to use them after delivery.¹⁰

When a bleeding tendency is present in a patient with a blood dyscrasia, anticoagulants should not be used. Pulmonary embolism in such a situation is an indication for ligation of the inferior vena cava.

Septic thrombophlebitis should be treated with antibiotics and anticoagulants. When septic embolism occurs in the face of conservative treatment, ligation of the inferior vena cava and both ovarian veins should be carried out. Collins¹² reported his experience in 59 cases of septic thrombophlebitis treated by ligation of the inferior vena cava without the prior use of anticoagulants. The mortality rate in his series was 12 per cent. Reis, in discussing this report, stated that this mortality rate is much higher than when only antibiotics and anticoagulants are used in the treatment of septic thrombophlebitis.

Technic

Ligation of the inferior vena cava may be done in two ways. The method employed depends upon whether or not exploration of the abdomen is necessary. If it is not necessary to explore the abdomen, the technic of choice is the extraperitoneal approach

exactly like that used in doing a right lumbar sympathectomy.² With the flank elevated a transverse incision is made about 2 cm. above the umbilicus. The flank muscles are separated in the direction of their fibers and the peritoneum is reflected upward. The vena cava is exposed, carefully dissected free, and a heavy silk ligature passed about it and the vessel ligated in continuity. Care must be taken to avoid injury to the lumbar veins or to the vena cava. Loss of a large volume of blood at this location is poorly tolerated by the patient. It is also important to be sure no thrombus lies in the vein at the point of ligature, since it may be cut adrift by the ligature with disastrous results.

The intra-abdominal approach requires a long incision extending well above the umbilicus. The cecum and ascending colon may be mobilized and retracted medially exposing the vena cava; or the peritoneum overlying the bifurcation of the aorta may be divided and the vena cava exposed directly.

Postoperative Care. Postoperatively, the patient should be placed on anticoagulants in an effort to prevent thrombosis in the veins distal to the ligature. The legs should be carefully wrapped each day with Ace bandages and the foot of the bed elevated on shock blocks for two to three days. The patient is encouraged to exercise the legs and is allowed out of bed on the third or fourth day for brief periods. Activity is gradually increased according to the degree of edema present.

Results

The mortality rate from ligation of the vena cava ranges from zero to 15.2 per cent.^{2, 5} Death is usually due to the primary disease or to the pulmonary embolism for which the operation was done. An occasional patient will die from an embolus dislodged at the time of surgery.

Edema following ligation of the inferior vena cava is a difficult complication to evaluate since, in the experience of some surgeons it is a cause of much disability,^{5, 8} while in that of others it is an infrequent and usually transient phenomenon.² The late results probably depend upon the ability of the patient to develop adequate col-

lateral circulation. They depend, also, upon the extent of the thrombosis present at the time of ligation. The fact that edema is rare when the vena cava is ligated because of accidental damage supports this observation.⁴ Perhaps the reason the edema is worse on the previously uninvolved side is that the presence of the clot serves as a stimulus for the formation of adequate collateral circulation. Shea and Robinson⁸ reported that only 1 of 25 patients whose vena cava had been ligated had no symptoms. Twelve of the 25 had never been without moderate to extreme edema, and 7 of the remaining group had intermittent edema. Other prominent symptoms were fatigability, 80 per cent; claudication, 68 per cent; and ulceration, 40 per cent. Bowers⁵ reported results similar to those above. However, in spite of edema, 17 of 25 of his patients were able to earn a living; but the remaining 8 had to retire because of severe disability. On the other hand, Madden² reported edema which lasted less than six weeks in 33 per cent of his patients; only 5.5 per cent had permanent edema.

Regardless of good reports, it is certainly true that any person whose vena cava has been ligated no longer has his former reserve. There may not be edema with minimal activity, but when greater activity is required edema may ensue. Persistent edema produces stasis dermatitis and eventually ulceration. These late sequelae which may not appear for two to five years are by far the most disabling and serious complications following ligation of the inferior vena cava.

Conclusions

Ligation of the inferior vena cava may be a life saving measure in certain cases of thrombo-embolism; nevertheless, the indications for its use are not frequently encountered. The operation may produce disabling late sequelae and it certainly should not be used without due and careful consideration of the problem at hand. When the operation is indicated, one should not hesitate to employ it without delay.

Summary

- (1) The evolution of the use of ligation of the inferior vena cava has been traced.

- (2) The indications for ligation of the inferior vena cava have been discussed.
- (3) The technic of ligation of the inferior vena cava has been briefly presented.
- (4) The results of ligation of the inferior vena cava in thrombo-embolic disease have been presented.

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ANTICOAGULANT THERAPY IN MYOCARDIAL INFARCTION*

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Introduction

The use of anticoagulants in myocardial infarction has been in ever increasing vogue since about 1946 or 1947. Early studies indicated a better survival rate in patients treated with anticoagulants. In the early 1950's an extensive study was made by Wright and others under the auspices of the American Heart Association to attempt to establish a definitive body of information on the subject. The results of this study indicated that between 9 and 10 per cent more patients could be expected to survive a myocardial infarction when given anticoagulants adequately.

Selection of Patients

Some early experiences with Dicumarol, while the medical profession was learning to use it, were quite unfortunate in that a fairly large number of patients suffered se-

vere and sometimes fatal bleeding. Working on the assumption that anticoagulants are too hazardous for routine use in every patient who has a myocardial infarction Russek and others have attempted to divide patients into "good risk" and "poor risk" classifications during the first twenty-four hours after a myocardial infarction.

Although a rough prognosis regarding the probability of death or recovery may be based on such factors as duration of pain, fall in blood pressure, fever, leukocyte count, and more recently the serum glutamic oxylacetic transaminase determination, it is a matter of common experience that the prognosis in any given case of myocardial infarction is subject to sudden and unpredictable change. Although serious bleeding from the use of anticoagulants does occur, it has become much more rare as physicians have gained proficiency in the use of the drugs. The introduction of vitamin K₁, which will be discussed in more detail later, has also contributed to a less-

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ened risk attending the use of the coumarin derivatives. It is the opinion of a majority of cardiologists that any patient who has sustained a myocardial infarction will have a better prognosis with, and deserves treatment with anticoagulants.

Contraindications

Probably the most definite contraindication to the use of anticoagulants is in the group of patients who have known ulcerative lesions in the gastrointestinal tract. Gastrointestinal bleeding is difficult to control as well as being insidious and hard to evaluate. Patients with severe liver disease and patients having a blood dyscrasia and known hemorrhagic tendencies should be treated either not at all, or with great caution. A history of epistaxis or bleeding from hemorrhoids is not considered to be a contraindication since these problems can usually be controlled satisfactorily in hospitalized patients.

Initiation of Treatment

The first step is the drawing of blood for a prothrombin time. At the same time and through the same needle an injection of 50 to 100 mg. of heparin sodium may be given intravenously. Heparin acts both to inhibit thrombin formation and to destroy already formed thrombin. Quick has postulated that thrombin is expressed from a retracting clot, thus tending to its propagation. On this basis heparin should be of theoretical advantage as early as possible after a coronary occlusion.

If the prothrombin time is normal or near normal, 250 to 300 mg. of Dicumarol are given by mouth. Prothrombin time is determined daily and Dicumarol is ordered on a basis of the laboratory result. Under ordinary circumstances, 200 mg. of Dicumarol should be given on the second day, 100 mg. on the third day, and thereafter from 25 to 150 mg. per day, depending on the prothrombin time and the prothrombin concentration done by the Quick technic. In most hospitals the prothrombin time is expressed both in seconds and in per cent of normal. The goal should be to keep the time at about one and one-half to two and one-half times that of the normal control and the concentration to approximately 20

per cent of normal. It is usually simpler to give a single dose of Dicumarol, however, it may be given in divided doses if desired. If prolonged hospitalization is necessary beyond three or four weeks the prothrombin time may be taken less often and dosages ordered for several days in advance until time for the next laboratory determination.

During the first few days of treatment heparin sodium should be given intravenously each morning through the needle used to draw blood for the prothrombin time, in order to decrease the number of venipunctures. It should be given in the same dose intravenously at bedtime and twice between. This should be continued until the prothrombin time is within a therapeutic range.

Bleeding

It is inevitable that a few patients receiving anticoagulants will have bleeding in some form. The most common site is from the genitourinary tract. It is seldom a serious problem here. Apparently bleeding from the genitourinary tract usually originates in the bladder, being greater when the bladder is distended with urine and less when it is constricted.

An occasional patient with a renal or ureteral calculus may have bleeding higher in the tract with much more severe symptomatology. Epistaxis is also fairly common. Occasionally one will diagnose a previously unsuspected duodenal ulcer by the bleeding which is provoked by anticoagulant therapy.

In the management of bleeding, vitamin K-1 oxide, under the trade name of Mephyton, given intravenously has a prompt effect on the prothrombin time, returning it toward normal in one to three hours. The dose varies from 50 to 100 mg. The prothrombin time should be checked three or four hours after administration of the drug and another dose given if it has not attained a satisfactory level. For cases of severe prolongation of the prothrombin time without bleeding, Mephyton is available in oral tablets of 5 mg. each; 2.5 to 10 mg. are considered to be adequate for such cases.

Duration of Treatment

In patients who are having their first myo-

cardial infarction, it is customary to give anticoagulants only throughout the period of hospitalization unless the patient desires further therapy, or unless there are other factors in the case which make the prognosis unfavorable. In general, a minimum of three weeks treatment is considered to be necessary in this group.

In patients who survive their second myocardial infarction, it has been our custom to advise continuation of anticoagulant therapy on an indefinite basis. Ambulatory anticoagulant therapy is being widely used in this country. It is not easy to evaluate the results in this form of treatment; however, a number of papers have been presented during the last few years which tend to support the belief that it is of definite value.

Dr. Donald Bales and I in our private

practice have given ambulatory anticoagulant treatment to 44 patients with coronary heart disease. Fortuitously, these could be separated into two equal groups of 22 patients each who were observed for an average of 18 months. One group continued therapy uninterruptedly and are still under treatment. In this group there were 4 coronary occlusions and 4 deaths while under treatment. In the group of 22 patients who stopped treatment for one reason or another there were 9 coronary occlusions and 5 deaths. The time factor was approximately equal in the two groups. It is our conclusion at the present time that patients who have had more than one myocardial infarction, or who have persistent symptoms of coronary insufficiency following one myocardial infarction should be given ambulatory anticoagulant therapy.

CEREBROVASCULAR MANIFESTATIONS OF THROMBO-EMBOLIC DISEASE AND THEIR MANAGEMENT*

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In the past there has been wide inclination to consider cerebrovascular manifestations of thrombo-embolic disease as something apart from vascular disease of this nature elsewhere in the body. Additions to our knowledge of the nature of cerebrovascular manifestations and some changes in approach to their treatment indicate that they are not so different as may have been thought.³

This newer knowledge is largely the result of the widespread employment of arteriography by neurosurgeons in the determination of the nature and extent of pathologic change in the cerebral circulation.¹ We have learned, for example, that many of the instances of cerebral thrombosis which were thought in the past to be due to occlusions of branches of the circle of Willis may actually be manifestations of occlusions occurring in the internal carotid artery or in the vertebral or basilar arteries. Since these vessels are not only

different in size from the cerebral arteries themselves, but also differ considerably in their relationships to surrounding tissues, modifications in the rationale of treatment have been made.^{2, 3, 5}

Arteriosclerosis continues to be a major offender in the production of thrombotic and embolic phenomena in the cerebral circulation. Gradual narrowing of either the major or minor vessels may occur through sclerotic plaques with eventual complete occlusion the general rule. (Fig. 1.) Often there are signs of vascular insufficiency before the complete occlusion occurs. Less commonly, collagen disease, a blood dyscrasia or alterations in the blood in the pregnant or postpartum state may play a role.

In our present state of knowledge it is useful, from the standpoint of both diagnosis and treatment, to divide the cerebrovascular manifestations of thrombo-embolic disease into several categories; namely, *occlusion* of a major vessel, or of a cerebral artery, and *embolus* of a cerebral artery. A further category may be added if one wishes to include *venous thrombosis*, which is usually the result of an infectious process

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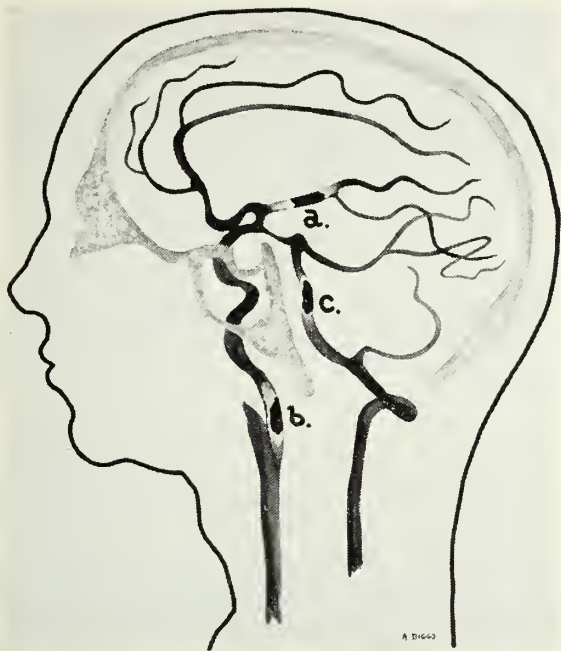


FIG. 1. The major blood vessels supplying circulation to the brain and the principal branches of the circle of Willis. Thrombi are shown in the middle cerebral artery (a.), the internal carotid artery just above the bifurcation of the common carotid artery (b.), and the basilar artery (c.).

involving either major cerebral veins or the dural sinuses themselves.

By *thrombosis of a major vessel* is meant occlusion of a carotid artery, a vertebral artery, or of the basilar artery. (Fig. 1-b, c.) Signs of vascular insufficiency often appear before a catastrophic occlusion occurs and are the result of both sclerotic plaques and the formation of mural thrombi in conjunction with such plaques. If the carotid system is involved, transient episodes of numbness or weakness involving the opposite side of the body, and sometimes syncopal attacks, are early signs. Complete occlusion of the carotid artery may lead to hemiplegia or to less severe neurologic manifestations if the collateral circulation is good. With the involvement of vertebral and basilar arteries there may also be disturbances of consciousness from interference with the blood supply to the reticular formation; cranial nerve involvement signs and transient bilateral motor signs may occur as well as disturbances of coordination.

Recognition of partial or complete occlusion of the carotid artery through arteriography is important since it makes possible proper planning of treatment.¹ In some

cases thrombectomy may be possible, and the point is being reached where excision of an arteriosclerotic portion of the vessel may actually become feasible. Treatment with anticoagulant drugs may also be effective and should be considered, as should cervical sympathetic block.^{2, 3, 5} Anticoagulant therapy is the treatment of choice with involvement of the basilar system since it is not amenable to surgical attack.

Thrombosis of the arteries of the cerebrum and cerebellum, which are branches of the circle of Willis, present a somewhat different problem.³ (Fig. 1-a.) Occlusion of these vessels may lead to either anemic infarction or hemorrhagic infarction of the brain. If the infarction is hemorrhagic anticoagulant therapy is contraindicated. It is also possible for an anemic infarct to be converted to a hemorrhagic one. At any rate such therapy should be undertaken with considerable caution. Cervical sympathetic block may be of benefit, particularly when the lesion is not a large one. While it does not alter the actual amount of blood flow to the head, it redistributes the flow and may overcome vasospasm in the region of the infarct. Such vasospasm deprives a much larger area of the brain of adequate circulation than that resulting from the vascular occlusion alone. Cervical sympathetic block should probably be given a trial, and if the patient reacts favorably its use may be continued. Other than this one has to rely mainly on general supportive measures, since surgical technic for the removal of thrombi from the cerebral vessels has not yet been developed to a practical degree of usefulness.⁴

Embolism of the cerebral artery usually occurs in young individuals as a result of subacute bacterial endocarditis, and in older individuals as a complication of coronary occlusion or auricular fibrillation (Fig. 1-a). A shower of emboli may occur with multiple involvement. If the infarction resulting from the embolus is localized, sympathetic block may again be of benefit. Anticoagulant therapy is usually beneficial.^{3, 5} Blocks should be discontinued after they are started because of the danger of local hemorrhage.

An interesting combination may occur in which *thrombosis of the carotid artery* re-

sults in embolism to one of the cerebral arteries. (Fig. 1-a, b.) This may indeed be the event that calls attention to the presence of thrombo-embolic disease in the patient, and on study through arteriography discloses the insufficiency or partial occlusion of the carotid artery. In such an instance modification of treatment according to the principles laid down under the discussion above relating to both of these conditions may be necessary.

Since occlusion of the dural sinus is most often of infectious nature, the combination of antibiotic and anticoagulant therapy is usually necessary.³ Until the advent of antibiotics cavernous sinus thrombosis was almost a uniformly fatal disease, but the combined therapy suggested has proved effective in a number of cases. Thrombectomy of the lateral sinus may sometimes be practical, but generally surgical treatment in thrombosis of the dural sinus is not feasible.

Conclusions

In assessing the cerebrovascular manifestations of thrombo-embolic disease, it is important to ascertain whether there is: (1) occlusion of a major vessel; (2) occlusion of a cerebral artery; (3) embolism to a cere-

bral artery; (4) a combination of occlusion of a major artery with occlusion of a cerebral artery; or (5) venous thrombosis. All these patients require considerable care from the supportive standpoint, but in addition to this specific therapy in the form of the use of anticoagulants, antibiotics, cervical sympathetic block, and thrombectomy is available. The selection of the therapy depends upon an exact diagnosis and an understanding of the pathogenesis of the lesions.

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Tear-Test for Glucose. Lewis, J. G.: *Brit. Med. J.* 1:585, 1957.

The author describes the use of Clinistix for the detection of glucose in lacrimal secretion. Clinistix is either applied to the conjunctiva of the lower eyelid until the tip is moistened, or alternatively a tip moistened with water is applied for a few minutes. The results should be read after two to three minutes, preferably in daylight against a white background. If glucose is present a blue color will develop. Occasionally a momentary stinging in the eye occurs, and this can be minimized by moistening the stick with water or by cutting the stick lengthwise to reduce its bulk. It has been found that in patients with a blood sugar

above 200 mg. % a blue color appears. The depth of the color is roughly related to the blood sugar level. Where this value is over 300 mg. % often a blue reaction develops very quickly. It is suggested that this "tear test" might be used to supplement existing orthodox tests. It might be especially useful in suspected diabetics in whom a urine specimen is not readily obtainable. Diabetics with heavy glycosuria due to low renal threshold tend to give a weaker reaction than those with higher levels. As a bedside test, it is possible that this could be an extra point of information in the differential diagnosis of coma in the diabetic. (Abstracted for the Tennessee Diabetes Association by Charles A. Rosenberg, M.D., Memphis.)

The "silent" stone and acute cholecystitis are discussed, as well as management outlined.

CHOLECYSTECTOMY: Present Indications and Techniques*

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The presence of gallstones is an indication for cholecystectomy. This dogmatic statement requires surprisingly few qualifications. There have been no radical changes in diagnosis or treatment in recent years in this field. There are, however, certain aspects of the problem which have been rather controversial for many years. The true situation in two of these controversial issues is beginning to come into clear focus.

"Silent" Gallstones

The first of these issues is that of so-called "silent gallstones." What should be done about them? Should we let "sleeping dogs lie," should we advise some of these people to have their gallbladder removed, or should we advise all of them to have the gallbladder removed prophylactically? Evidence is accumulating that everyone with gallstones who is a reasonable surgical risk, should have the gallbladder removed, and the sooner the better.

The main source of patients with silent gallstones will probably be those who have had a complete gastrointestinal "work-up" and in whom gallstones have been demonstrated, but in whom the stones are apparently not the cause of the patient's presenting symptoms. Another possible source will be from the complete physical examination which many companies are now sponsoring for their employees.

It is obvious that a gallbladder containing small stones should be removed to prevent the occurrence of common duct stones. However, large gallstones may be equally dangerous to the patient. Whereas it is true that there is little or no danger of choledocholithiasis, large stones are particularly prone to erode into a neighboring viscus, causing an internal biliary fistula

and possible gallstone ileus. Gallstone ileus is a rather deadly disease; most reports in the literature cite a mortality rate of the order of 30 to 40 per cent.

Still another reason usually given for removing gallbladders containing stones is the association of gallstones with biliary tract neoplasm. The evidence is still not convincing, however, that the stones are the direct cause of the neoplasm.

The mortality rate in gallbladder surgery in patients under 50 years is less than 1 per cent. The mortality rate in gallbladder surgery in patients over 65 is close to 10 per cent. Furthermore, acute cholecystitis as compared to chronic cholecystitis occurs in a higher percentage of older patients, and is a more serious disease in the older person. Therefore, it is important to operate on patients with gallstones as soon as they are found. There is no reason to temporize.

The most important reason for removing silent gallstones is perhaps the least obvious. The most common single cause of death in gallbladder surgery is, and this is the same for all age groups, hepatic insufficiency. Though the stones may be essentially silent, with every slight attack of right upper quadrant distress, there is often ascending cholangitis with local inflammation of the liver which, of course, heals by scarring. After many years and many attacks the hepatic reserve may be nonexistent. Then, if the patient with silent gallstones suddenly gets surgical biliary tract disease, his liver can no longer tolerate the operation which is necessary to save his life. This, I believe, is the crux of the whole situation. Are those gallstones really silent or are they like the Chinese water torture, gradually and insidiously destroying normal liver function?

Acute Cholecystitis

The second controversial issue is:—Should surgery be done for acute cholecystitis; and if so, when? In general there have been

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three distinct opinions. First, that this condition must be considered a surgical emergency in every patient; that it should be considered analagous to acute appendicitis, and thus everyone must have operation unless the strictest contraindications exist. Second, others have felt that all patients should be treated conservatively during the acute attack, that operation should be postponed either until the process subsides, or until it becomes apparent that the condition is progressing and that perforation is imminent. Third, others have taken the middle road between these two extremes and have advocated operation for patients who are seen early in the attack, but have advocated that the surgical attack be postponed and conservative treatment be carried out if the patient is first seen after the first 48 to 72 hours of the acute attack.

In over 90 per cent of patients with acute cholecystitis the starting point for the process is the impaction of a stone in the cystic duct. This occludes the flow of bile from the gallbladder, but since the gallbladder continues to concentrate the bile and to secrete substances into the lumen, distension, edema, and a chemical inflammation occur. Within 48 to 72 hours bacterial infection is superimposed on the chemical inflammation. If the distension and edema are sufficiently great to compromise the blood supply to the wall of the gallbladder, then areas of gangrene and subsequently perforation result.

On the basis of the experiences of others as reported in the recent literature and from my own experience, I believe the evidence is in favor of the middle road. Surgery during the first 48 hours is usually easy on the patient and easy for the surgeon. Cholecystectomy during the early phase is often easier than is "interval" cholecystectomy. Early in the attack actual bacteria infection per se, as opposed to inflammation, is no great problem, but becomes a rather serious problem after the first 72 hours. Also, as the disease progresses, edema and inflammation obscure landmarks, and blood loss from oozing surfaces is considerably increased. It is during this later period of acute cholecystitis when the common duct is much more likely to be injured during the surgical procedure. Op-

eration after the first 72 hours, therefore, is rough on the patient and rough on the surgeon.

What are the contraindications to surgery in the first 48 to 72 hours? One might consider such problems as pregnancy, old age, cardiac disease or diabetes mellitus as contraindications. The reverse is probably true, these people usually tolerate early operation better than they can tolerate the superimposition of acute cholecystitis on their pre-existing disease.

Though the middle road approach to the problem seems best for private patients, one must be considerably more aggressive in dealing with acute cholecystitis in the charity hospital. It happens all too often that a patient is nursed through a bout of acute cholecystitis, given an appointment to be rehospitalized in two or three months for an "interval" cholecystectomy, but who next appears some months or years later with another bout of acute cholecystitis. Accordingly, it is now our practice on the Surgical Service at the University of Tennessee to operate on most patients with acute cholecystitis as soon as we can get them into reasonably good condition, regardless of when in the course of their disease we first see them. Though the operation is somewhat more difficult technically, we feel that we are following the best course for the unintelligent and uncooperative patient.

The following remarks concerning surgical technique have been made many times but are of sufficient importance to bear repeating.

If the cystic duct and artery cannot be easily identified because of edema and inflammation in the area, it is safer to remove the gallbladder by starting dissection at the fundus and working downward. (Fig. 1) If a second procedure becomes necessary, it is far easier to resect a long cystic duct stump than to reconstruct a divided common duct.

If cholecystectomy is inadvisable because of the patient's condition or because of technical difficulties, one should not be ashamed to compromise by doing a cholecystostomy. (Fig. 2)

Far too many common ducts are injured

during cholecystectomy. A frequent cause of such injury is blind clamping or suturing in an attempt to control an unexpected hemorrhage. Hemorrhage should be no cause for alarm if one will remember to insert the forefinger into the foramen of Winslow and compress the hepatic artery between thumb and forefinger. (Fig. 3) The field can then be cleared by suction and sponging and the vessel easily identified and ligated.

Summary

1. Appropriate surgical therapy is indicated for acute cholecystitis if the patient is seen in the first 48 to 72 hours of the attack.

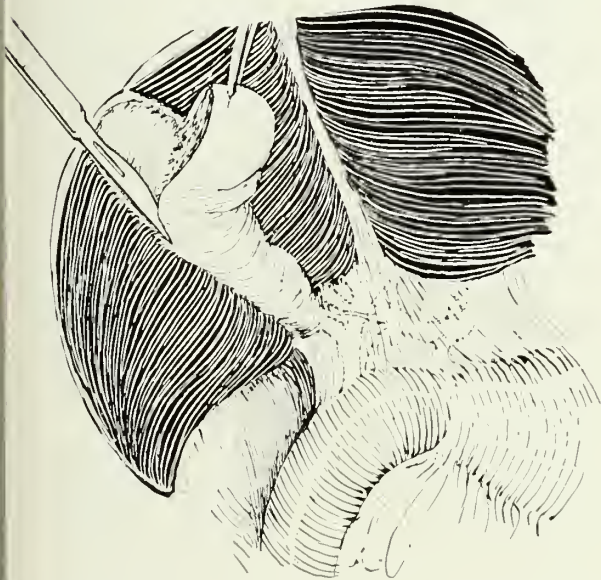


FIG. 1. Removing gallbladder from fundus downward.



FIG. 2. Completed Pezzar Cholecystostomy.



FIG. 3. Compression of hepatic artery by inserting finger into foramen of Winslow.

If first seen after 72 hours, conservative therapy is indicated unless perforation seems imminent.

2. Every patient with gallstones who is a reasonable surgical risk should be advised to have a cholecystectomy lest serious complications occur.

3. Some surgical safeguards in biliary tract surgery are discussed.

Discussion

DR. B. O. GARNER, Union City, Tenn.: The statement made by Dr. Storer at the beginning of his paper that the indication for cholecystectomy is cholelithiasis is certainly very true.

It is amazing to me that there are among us today many physicians who still believe that cholelithiasis is a medical problem and should be treated without surgery, but fortunately these physicians are in the minority. So often patients come to the office stating that they have had gallbladder disease and gallstones for the last twenty years, but that their doctor has told them they did not need surgery. Many others come to the office and want a prescription for something to dissolve their gallstones. They give very graphic and vivid descriptions of the prescription that Mrs. Jones was given which dissolved her gallstones ten years ago and she has had no further trouble.

Early in my training I was taught that if the diagnosis of cholelithiasis was made, the patient should be encouraged to have operation unless there is some distinct contraindication. Fortunately there are very few contraindications to cholecystectomy.

The question of the opportune time for surgery is a very good one. With the average case of chronic cholecystitis and cholelithiasis I feel that operation should be done at the earliest possible time. It is certainly not an emergency, but it is an operation that should not be postponed indefinitely. I usually ask my patients to try and decide on a time that is convenient within the first two months after I have seen them.

Acute cholecystitis is a different problem. I am inclined to follow the third course Dr. Storer indicates, namely, the middle of the road. I try to individualize each case, taking into consideration the physical status, whether the patient is the breadwinner of his family, and the emotional make-up. Certainly those instances of cholecystitis that do not subside very promptly will require early operation. Many of these patients are women, in fact the majority of them are, and since they are not usually the breadwinners in the family, it is sometimes advisable to delay immediate surgery and operate after the acute episode has passed. I have, however, operated upon them as much as two weeks following the initial onset. Even though the surgery is decidedly more difficult then, it still does not add a great deal to the mortality or morbidity statistics. I agree with Dr. Storer that if patients can be operated upon in the first 48 to 72 hours this is the optimum time.

The cause of acute cholecystitis, as Dr. Storer has pointed out, is usually an impacted stone in the cystic duct. Ordinarily when we get a patient of this type in the hospital, he is scheduled for a cholecystogram the following morning, and if it turns out to show nonvisualization, it is repeated the following morning and an intravenous cholangiogram carried out. If the gallbladder still does not outline, we consider the patient has an obstructed cystic duct and at that time decide

whether he will be operated upon in the acute phase, or allowed to subside and operated upon in the chronic phase.

It is now well known and definitely established that repeated attacks of cholecystitis will produce serious liver damage in time to come. In fact the deaths that I have seen following gallbladder surgery have been due to liver failure produced by long-standing and repeated attacks of acute cholecystitis.

I am in complete agreement with Dr. Storer on the issue of the "silent" gallstone. I believe such patients should undergo cholecystectomy unless there is a definite contraindication. When I get this type of patient I point out to him that in all probability he will have an attack later on which will require operation. In some of these cases, when the patient's condition is such that he is not a good risk for cholecystectomy, cholecystostomy is performed.

Dr. Storer's remarks concerning the surgical technic of cholecystectomy are certainly appropriate. I would like to also emphasize what he has said. Gallbladder surgery is relatively easy if one is familiar with the anatomy and with the variations in anatomy that can occur. If the surgeon is not familiar with these he certainly should not attempt this type of surgery. I think that the cystic duct and the cystic vessels should be identified and individually ligated in all cases. The way in which this is carried out is left entirely to the individual. The type incision and the type anesthetic again is a personal problem and what works best for the surgeon and the anesthetist is what should be used.

I want to congratulate Dr. Storer on his excellent presentation on some of the problems of cholecystectomy. I appreciate the opportunity to discuss his interesting paper.

The Treatment of Displaced Fractures of the Neck of the Femur by Compression. J. Charnley, N. J. Blockey and D. W. Purser: *J. Bone & Joint Surg.* 39-B:45, 1957.

The methods of compression arthrodeses, as described by Charnley, are widely known. In this paper, he discusses the nail for use in displaced fractures of the femoral neck which utilizes the factor of compression. The apparatus and technic are thoroughly described. The nail is quite intricate and one naturally wonders if it is mechanically sound. A series of 33 patients were available for study, with a follow-up of more than one year, although 81 patients have undergone this particular operation. The authors conclude that this method of treatment of displaced fractures of the neck of the femur probably eliminates non-union when the head is fully viable, and that primary osseous union occurs in approximately one-third of the cases. They feel that vascular complications occur to a varying extent in approximately two-thirds of the cases, feeling that early

and rapid extrusion of the nail indicates a vascular complication of the head.

Of the 33 cases followed for one year or more, 27 exhibited good results and 6 were failures. Thus 82% of the cases were satisfactory which is a much higher percentage of good results than has ever been consistently obtained by any other method of immobilizing this fracture. Of the 6 early failures, 3 were due to the screw cutting out of the head, one to breakage of the screw and two to complete collapse of the head from necrosis. The authors do not consider this point but it is probable that there is a certain irreducible minimum of displaced fractures of the neck of the femur which cannot be healed by any means, due to the factor of avascularity. This is a good paper which carefully describes the technic of insertion of this intricate nail and one naturally wonders if the authors will be able to maintain the present high percentage of satisfactory results in a larger series of cases. (Abstracted by Thomas F. Parrish, M.D., Nashville.)

Though the postoperative complications and mortality of acute appendicitis have decreased remarkably, prophylaxis in their avoidance is still essential.

COMPLICATIONS OF ACUTE APPENDICITIS*

JOHN C. RIDDLER, M.D.,† Jackson, Tenn.

Introduction

This paper reviews the postoperative surgical complications encountered in 500 consecutive cases of acute appendicitis seen at the Jackson Clinic, from August, 1950, to August, 1956. The diagnosis in all instances was confirmed by microscopic examination. During the last twenty-five years there have been few advances in diagnosis of this disease or in the technic of appendectomy. Management of the patient in the postoperative period, however, has improved tremendously since the advent of antibiotics, and the mortality rate is now less than 1 per cent in most of the reported series. It is likely that the morbidity and mortality can be further reduced by greater utilization of the bacteriology laboratory and specific antibiotic therapy.

Complications

In table 1, it is seen that prolonged ileus

Table 1

Postoperative Surgical Complications	33 (6.6%)
Prolonged ileus	10
Wound infection	17
Pelvic abscess	4
Thrombophlebitis	1
Atelectasis	1
Associated Conditions	
Mucocele	3
Carcinoid tumor	2
Pregnancy	5
Duplication of appendiceal lumen	1
Mortality	3 (0.6%)

was encountered in 10 patients. In 9 of these a gangrenous and/or perforated appendix had been removed. Wound infection found in 17 cases followed removal of a gangrenous and/or ruptured appendix in 15 instances. All the cases of pelvic abscess followed removal of gangrenous and/or ruptured appendices. Thrombophlebitis and atelectasis each appeared once.

The associated conditions listed in table 1

*Read before the Alcorn County Medical Club, May 27, 1957, Corinth, Miss.
†From the Jackson Clinic, Jackson, Tenn.

did not cause prolonged hospitalization. The patients having mucocele and carcinoid tumors have remained well. None of the 5 pregnancies were lost as a result of appendectomy. Duplication of the appendiceal lumen is the only appendiceal anomaly encountered in the series. Three patients died following appendectomy. Two of these were in the ninth decade, had been sick 3 to 5 days before admission, had peritonitis at the time of operation and apparently died of overwhelming infection. The third fatality was in a 16 year old white boy who was found to have generalized peritonitis from a ruptured appendix. Intensive antibiotic therapy and supportive measures were ineffective and he died on the third postoperative day of generalized peritonitis.

Treatment

The treatment of adynamic ileus consisted of gastric suction, intravenous fluids and antibiotics. The ileus undoubtedly resulted from peritonitis and disappeared after the infection subsided. Wound infection, occurring in 17 cases, resulted from contaminated exudate in a closed space. In 9 of these cases it was necessary to establish adequate wound drainage in the postoperative period by insertion of a rubber tissue drain through the incision. Of the 4 patients with pelvic abscess, one resolved with antibiotic therapy, one drained spontaneously via the rectum, one was drained through an inguinal incision because it was inaccessible from below, and the remaining abscess was drained surgically via the rectum. The single instance of thrombophlebitis responded satisfactorily to anti-coagulant therapy. The one patient who had atelectasis was promptly relieved by removal of a mucus plug through a bronchoscope.

Discussion

The treatment of postoperative complica-

tions is most important. However, one should not lose sight of taking all possible steps to prevent complications. It is fair to assume that all the cases of prolonged ileus, wound infection and pelvic abscess resulted from residual contaminated material remaining in the peritoneal cavity or in the wound. Recovery will promptly follow adequate drainage of the offending material or sterilization of the material by specific antibiotics and/or host resistance.

There are several methods of prophylaxis that can be used advantageously:

(1) *Removal of contaminated fluid.* Mechanical removal of peritoneal fluid by suction is worthwhile to reduce the total number of microorganisms and thereby lessening the chances for abscess formation. Lavage of the wound after peritoneal closure with saline will reduce the incidence of wound infection by reducing the number of remaining microorganisms.

(2) *Drains.* There is no unanimity of opinion regarding the use of drains in cases of acute appendicitis. In this small series it appears that a small rubber tissue drain inserted between the skin edges down to the peritoneum is advisable. In the cases so handled the incidence of wound infection is low. Drains placed inside the peritoneal cavity are not believed to significantly reduce the development of postoperative surgical complications.

(3) *Antibiotics.* The number of cases in this series in which intraperitoneal antibiotics have been used is too few to be

significant. However, it would appear to have no contraindications although the microorganisms may not be sensitive to the drug that is selected. In the case of a gangrenous and/or perforated appendices it is wise to obtain a specimen of peritoneal fluid for culture and antibiotic sensitivity studies. The latter studies should be reported in 24 to 36 hours and specific therapy should substantially reduce the complications due to infection. While awaiting the sensitivity studies, penicillin and streptomycin are probably the preferable drugs.

(4) *Position of patient in postoperative period.* This simple aid is often forgotten by the busy surgeon. After recovery from anesthesia following removal of a gangrenous and/or perforated appendix, it is wise to put the patient in Fowler's position. If an abscess within the peritoneal cavity is to develop, this position should aid in localization in the cul-de-sac. Drainage of a cul-de-sac abscess via the rectum or posterior vaginal fornix is much more satisfactory than drainage of a peritoneal abscess elsewhere. Turning the patient on the right side or into the prone position is helpful in the prevention and treatment of wound infection.

Summary

The postoperative surgical complications in 500 consecutive cases of acute appendicitis have been reviewed. Means of prevention and treatment of complications are discussed.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Tennessee Plan Has 995,611 Participants At Close of 1956

● A recent survey conducted by the Health Insurance Council, plus statistics gathered by TSMA from the two non-profit Associations show that the number of Tennesseans covered in the Tennessee Plan as of December 31, 1956 is 995,611. This total is made up of 351,213 primary insureds and 644,398 dependents. This represents nearly 1,000,000 persons in Tennessee covered under the plan and is close to 1/3 of the total population of the state.

Prepaid Insurance Committee Conducts Important Meeting

● The Prepaid Insurance Committee met on June 16th to continue its study in keeping with instructions of the House of Delegates, in an effort to come up with provisions in the Tennessee Plan that would be workable and acceptable. A number of problems confronting the committee were discussed in detail and several recommendations were adopted. Among these was a motion that the Committee recommend that a service plan of prepaid insurance be continued by the Tennessee State Medical Association. Another motion was adopted for the Association to sponsor two types of service plans, one for the very low income groups and another for those with a higher income.

Multiple Coverage

● The Committee discussed in detail and will continue to work on a means to solve the multiple coverage problem wherein patients holding more than one policy may not continue to claim service benefits.

Another matter studied by the Committee was a better means of identifying the income of patients under the Tennessee Plan to better determine what patients are eligible for service benefits. It is planned by the Committee to work out these problems and obtain the entire Committee's endorsement prior to a called meeting of the House of Delegates sometime during the fall.

Report on Actions Of the House of Delegates of AMA June 3-7, New York

● Revisions of the Principles of Medical Ethics, relations with the United Mine Workers of America Welfare and Retirement Fund, the Federal Government's Medical Care Program, new standards for medical schools, a new statement on occupational health programs and the issue of social security benefits for physicians were among the wide variety of subjects acted upon by the House of Delegates of the American Medical Association's 106th annual meeting held June 3-7 in New York City. 19,469 physicians registered for the meeting.

New Principles of Medical Ethics

● The House approved the long discussed revision of the Principles of Medical Ethics, originally submitted at the 1956 annual meeting in Chicago. The final version, presented by the Council on Constitution and By-Laws and then amended by reference committee and House discussions in New York, was adopted and the entire preamble and ten section code of ethics is printed in this issue of the JOURNAL under "Medical News in Tennessee." This is important to every

physician and you are urged to turn to page 311 for reading and study of the Revised Principles.

Guides for Relations With UMWA Fund

● In a key action on the basic issue of third party intervention, as it affects the patients' free choice of physician and the physician's method of remuneration, the House adopted the "Suggested Guide to Relationships Between State and County Medical Societies and the UMWA Welfare and Retirement Fund." In approving the Guide, the House also recommended that the Board of Trustees study the feasibility and possibility of setting up similar guides for relations with other third party groups such as management and labor union plans.

The Medicare Program

● The AMA House considered three resolutions dealing with the federal government's medicare program for dependents of servicemen. The delegates adopted one resolution condemning any payments under Medicare "to or on behalf of any resident, fellow, intern, or other house officer in similar status who is participating in a training program." In another action on Medicare, the House recommended that the decision on type of contract and whether or not a fee schedule is included in future contract negotiations should be left to individual state's determination. In this connection, however, the House re-stated the AMA conviction that: the Dependent Medical Care Act as enacted by Congress does not require a fixed fee schedule; the establishment of such schedules would be more expensive than permitting physicians to charge their normal fees and fixed fee schedules would ultimately disrupt the economics of medical practice.

Social Security for Doctors

● Two resolutions favoring compulsory inclusion of physicians in the federal social security system and another one calling for a nationwide referendum of AMA members on the issue were rejected by the House. The delegates re-affirmed their opposition to compulsory coverage of physicians under the old age and survivors insurance provisions of the social security act. They also recommended a strongly stepped up informational program of education which will reach every member of the Association, explaining the reasons underlying the position of the House of Delegates on this issue. The House at the same time will re-affirm its support of the Jenkins-Keogh bills.

Other Actions

● A new statement on medical schools was adopted entitled "Functions and Structure of a Modern Medical School." The House also approved a new statement on the "Scope, Objectives and Functions of Occupational Health Programs." Other action included a recommendation and further study and a progressive program of action, probably including legislative changes, to solve the problem of narcotic addiction; urged a more careful screening of television and radio patent medicine advertisements; directed the Board of Trustees to investigate indiscriminate use of stimulants such as amphetamine, particularly in relation to athletic programs; opposed the establishment of any further veterans facilities for the care of non-service connected illnesses of veterans; condemned the compulsory assessment of medical men and staff members by hospitals in fund raising campaigns; and commended the Board and Committee on Poliomyelitis for their prompt action in stimulating national interest in the polio immunization program.

Public Service

THE TENNESSEE TEN

Legislative Council to Appoint Sub-Committee

● The Tennessee Legislative Council Committee has agreed to appoint a sub-committee to work with the Tennessee Nurses Association, TSMA, and other allied groups in an effort to determine what can be done to alleviate the nursing shortage in Tennessee. The members of the sub-committee had not been announced at this writing.

Dr. Cannon Represents TSMA

● The Executive Sub-Committee of the Public Service Committee designated Dr. Richard O. Cannon, Director, Vanderbilt Hospital, to represent TSMA at the hearing. The Sub-Committee approved the signing of a joint statement which set forth the factors responsible for the shortage of nurses.

Nursing Survey Asks Appropriation

● The only specific recommendations made at the hearing came from Miss Alma E. Gault, Chairman, Committee to Make a Statewide Survey of Nursing. The committee tentatively recommended that the need for graduate training for nurse training be given immediate attention; that grants in aid from official and private sources in the amount of \$50,000 annually for the next ten years be made available for preparation of teachers from Tennessee Schools; and that \$150,000 a year for the next ten years be provided to assist other categories of professional nurses in improving their present jobs and advancement to other positions.

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McConnell Named to Press Award Board

● W. H. McConnell, Publisher, The Carroll County Democrat, has been appointed to the Press Award Board for a one-year term. Mr. McConnell succeeds Mr. Alison Simonton, Publisher, the Covington Leader, who died last year.

Other members of the Board re-appointed for one-year terms are Zollie Howard, the Memphis Press Scimitar; John Bragg, The Rutherford Courier; Loyce W. Miller, the Knoxville News-Sentinel; Horace Wells, the Clinton Courier-News; Dr. Charles C. Trabue, IV, Chairman of the Board, TSMA; and Dr. R. B. Wood, immediate past-president of TSMA.

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New A.M.A. Transcription Series Available Through TSMA Public Service Office

● "Harmony and Health", barbershop harmony at its best, is the latest electrical transcription series made available to local radio stations by the A.M.A. Letters have been sent all secretaries of county medical societies and all radio stations in Tennessee, advising them that the series may be ordered, without charge, through the Public Service Office of TSMA. The "sales message" contained in the transcribed program should be most helpful in informing the lay public of the service being performed by organized medicine.

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What Everyone Should Know About Doctors"

● The A.M.A. has also made available to the Public Service Office a limited number of copies, without charge, of a new booklet, "What Everyone Should Know About Doctors." The booklets could be distributed in the doctor's reception room. The M.D.'s education and professional training, as

well as helpful pointers on how the patient can cooperate to maintain a high level of health, are portrayed in an interesting manner. Requests for the booklet should be made to the Public Service Office of TSMA.

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**Committeemen Chosen
To Help Draft
Press Code**

● The Tennessee Broadcasters Association and the Tennessee Hospital Association have named representatives to a committee which will attempt to draw up a statewide press, radio, and television code, or guide, to cooperation between the news media and the medical profession. The Hospital Association has selected its public relations director, Mr. Frank Aday, of Chattanooga, and the Broadcasters will be represented by Mr. Jim Miller, News Director, WLAC Radio, Nashville. The Tennessee Press Association was scheduled to name its appointee at its June 27th state meeting at Gatlinburg. TSMA will be represented by the Public Service Director.

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**Public Health Council
Approves Indigent
Hospital Program**

● Plans drawn up by the State Departments of Health and Public Welfare were approved in June by the Public Health Council. The fiscal administration of the program will be handled by these two departments, with the Health Department responsible for the annual disbursement of \$333,000 for the medically indigent, and the Welfare Department handling payments for public welfare recipients totaling \$1,250,000 a year.

**Dr. Edwards Protests
85% Payment of
Ward Costs**

Dr. L. W. Edwards, Nashville, who led the campaign to secure the Indigent Hospitalization program in Tennessee, protested to the Council that hospital administrators are displeased with the resolution adopted by the Council to pay only 85% of the statement of reimbursable cost submitted for hospitalization of indigent patients. Dr. R. H. Hutcheson, State Health Commissioner, pointed out that the 85% formula for the E.M.I.C. program was adopted during the war. However, the Council voted to allow the hospitals to work out a universal auditing system which, if satisfactory to the Council, would replace the 85% reimbursement plan.

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**Public Service
Staff on Call
To County Societies**

● The Chairman of the Public Service Committee, Dr. A. B. Scoville, Jr., Nashville, has written all secretaries of county medical societies pointing out that the facilities of the Public Service Office are constantly available to assist county societies in planning or implementing any projects which fall within the province of public service, as set forth in "The Tennessee Ten."

Dr. Scoville emphasized in his letter that "a continuing program of service to the public is as much a function of TSMA as is the care of the sick the responsibility of the individual physician."

Requests from county medical societies for assistance in any phase of their public service projects are always welcomed by the staff of the Public Service Office.

JACK DRAKE

Public Service Director

STAFF CONFERENCE

Vanderbilt University School of Medicine* Treatment of Thyrotoxicosis

DR. BARTON McSWAIN: Today we shall discuss the treatment of thyrotoxicosis. Up until 15 years ago, at which time Hertz and Roberts¹ and Hamilton and Lawrence² reported the use of radioactive iodine in such patients, the treatment was simple. The patients were prepared with iodine and the thyroid was removed. Fourteen years ago Astwood¹ described the use of thiouracil in patients with hyperthyroidism. Now, when we see a patient with that disease, we must decide which of three methods to use: anti-thyroid drugs, radioactive iodine or operation, and if operation is to be done, we must decide whether to prepare them with iodine alone or with a thiouracil type drug plus iodine.

Dr. Billings, which antithyroid drugs do you use?

DR. F. T. BILLINGS, JR.: The most satisfactory of the several antithyroid drugs available for the control of hyperthyroidism are propylthiouracil and tapazole (1-methyl-2-mercapto-imidazole). Of these two, propylthiouracil with its lower incidence of toxic reactions is the drug of choice.

DR. McSWAIN: How do these drugs act?

DR. BILLINGS: Their action depends upon inhibition of thyroid hormone synthesis and, as a consequence, the high serum protein bound iodine concentration of hyperthyroid patients falls progressively and may reach even hypothyroid levels within a relatively short time unless medication is properly regulated. If such a "chemical" hypothyroidism is allowed to persist, the inherent goitrogenic effect of these drugs will be manifest by further enlargement of the thyroid.

In contrast to iodine, they are capable of controlling even the most severe hyperthyroidism and, with appropriate adjustments in dose, maintaining a prolonged euthyroid state. In selected patients, they

are capable of producing a permanent remission of hyperthyroidism. Diminution of the size of the goiter during therapy is the most important evidence that such a remission has been achieved.

DR. McSWAIN: What are the toxic effects of these drugs?

DR. BILLINGS: It should be kept in mind that infrequent toxic effects to both propylthiouracil and tapazole do occur. The most frequent problem is the occurrence of mild fever and rashes. The two drugs are chemically different so that when such reactions appear, a shift can be made from one to the other. Of a very serious nature and occurring only rarely is granulocytopenia which is usually reversible when the drug is withdrawn.

DR. McSWAIN: Dr. Billings, will you please discuss the indications for antithyroid drug therapy?

DR. BILLINGS: The drugs which have been described above have made it possible to bring all types of thyrotoxicosis to the euthyroid state in a reasonably short time. It is, therefore, now possible to control thyrotoxicosis while a patient's general condition is improved preparatory to the use of a more conclusive definitive method of treatment such as surgery. This is especially exemplified by the management of the thyrotoxic patient with cardiac decompensation. Administration of propylthiouracil or 1-methyl-2-mercapto-imidazole allows ample time for the control of the heart disorder while the patient is maintained as long as necessary in the euthyroid state.

It is important to note that the diffuse toxic thyroid and the toxic adenoma respond equally promptly to the antithyroid drugs.

As mentioned above, in certain selected cases it may be elected to use an antithyroid drug in long term medical management of hyperthyroidism. In a substantial number of patients, Williams¹ has accomplished a sustained remission by controlling the thyrotoxicosis for 12 to 15 months. Although the disadvantages of surgery may thus be avoided, the continued long close supervision which must accompany prolonged antithyroid medication is also a disadvan-

*From the Departments of Surgery and Medicine, Vanderbilt University School of Medicine, Nashville, Tenn.

tage. As symptomatic improvement occurs, patients tend to let treatment lapse.

In thyrotoxicosis with pregnancy, the antithyroid drugs can be safely used to carry the patient to term. Since these drugs cross the placenta and since fetal thyroid is susceptible to their effects, care must be taken to use amounts just sufficient to maintain the pregnant patient within the higher limits of the euthyroid state.

DR. McSWAIN: What is the daily dose of propylthiouracil and of tapazole?

DR. BILLINGS: The usual dose of propylthiouracil is 300 to 600 mgm. daily; on the basis of a 10 to 1 ratio of effectiveness between the two drugs, the dose of tapazole ranges between 30 and 60 mgm. daily. The size of the initial daily dose depends upon the severity of the thyrotoxicosis, the lesser doses exerting satisfactory control over mild thyrotoxicosis. Clinical response is apparent in two to three weeks and complete control can be anticipated in two to three months. As clinical response becomes evident, the dose may gradually be reduced until daily maintenance schedule is reached. In the case of tapazole, this may be from 5 to 15 mgm. daily. If the response seems poor or satisfactory results are attained slowly, larger doses of medication may be required. Propylthiouracil and tapazole are rapidly excreted and are, therefore, best given at eight hour intervals.

DR. McSWAIN: How long do you continue drug therapy?

DR. BILLINGS: At least 12 months for antithyroid drug therapy alone. The duration of treatment depends both upon the desired objective and the rapidity with which the patient responds satisfactorily. When radioactive iodine is to be used in treatment, antithyroid drugs can be used in conjunction with it. Dr. Liddle will probably discuss this point. Especially important is the complete control of thyrotoxicosis prior to surgery. Medical therapy should be maintained until the euthyroid state is well established as evidenced by satisfactory clinical response and by determination of the basal metabolic rate and serum protein bound iodine level.

DR. McSWAIN: What about the recurrence rate?

DR. BILLINGS: Those who have had extensive experience find that the permanent remission rate is about 50% after 12 months of antithyroid drug therapy. The recurrences appear in a period of 3 to 9 months after cessation of therapy. If the patients who have relapsed are treated for a period of 12 months, about half of them have permanent remissions and so *ad infinitum*.

DR. McSWAIN: Thank you, Dr. Billings. Dr. Liddle, exactly what do you have in mind when you plan radioactive iodine therapy?

DR. GRANT W. LIDDLE: The aims of radioiodine therapy are basically similar to those of surgical treatment, that is, physical destruction of enough functioning thyroid tissue to cure the thyrotoxicosis while sparing enough tissue to avoid subsequent hypothyroidism. By way of contrast, antithyroid drugs do not destroy tissue but merely interrupt hormone synthesis by the gland until the basic disorder has undergone spontaneous remission.

DR. McSWAIN: Will you please tell us what percentage of patients with thyrotoxicosis can be cured by radioactive iodine and also describe its advantages and complications?

DR. LIDDLE: Given sufficient time, it should be possible to cure every case of thyrotoxicosis with radioiodine. In contrast to surgical treatment, the use of radioiodine does not require hospitalization and it entails no risk of subsequent hypoparathyroidism or recurrent laryngeal nerve paralysis. In contrast to long-term treatment with antithyroid drugs, the use of radioiodine does not require the close continuous cooperation of the patient over long periods of time and it entails no risk of agranulocytosis. The only common complication of radioiodine therapy is that of hypothyroidism. This occurs in about 10 per cent of patients and is manageable by the use of conventional thyroid substitution therapy.

DR. McSWAIN: How do you figure out how much I^{131} to give?

DR. LIDDLE: The oral dose of radioiodine (I^{131}) used in treating Graves' disease can

be estimated by using the following formula:

$$\text{I}^{131} \text{ in millicuries} = \frac{(\text{Estimated weight of thyroid in grams}) \times (k)}{(24 \text{ hour I}^{131} \text{ uptake, \%}) \times (\text{Biological half-time in days})}$$

where $K=50$, if the desired level of irradiation is 10,000 reps.*

DR. McSWAIN: How does I^{131} work?

DR. LIDDLE: Following the administration of radioiodine to a patient with Graves' disease, a major portion of it is removed from the blood by the thyroid gland, incorporated into organic precursors of thyroid hormone, and stored in intimate contact with the functioning cells of the thyroid. Although radioiodine emits a gamma ray which is sufficiently penetrating to permit monitoring by counting apparatus placed at a point several inches away from the thyroid gland, from a therapeutic standpoint the most important property of I^{131} is its abundant emission of a beta ray which effectively penetrates less than two millimeters of tissue. This means that only the thyroid, itself, will receive a significant amount of irradiation. I^{131} has a physical half-life of 8 days and it is discharged from the thyroid gland with a biological half-time of about 6 days, in the average case. Therapeutically significant amounts of radioiodine, therefore, persist in the gland for a number of weeks. The effects of irradiation on the thyroid gland are not immediately apparent, presumably because physical injury to the thyroid cells must develop before their physiological activity ceases. Clinical improvement resulting from radioiodine therapy does not begin until about 6 weeks after the therapeutic dose is administered. If, at the end of two or three months, the degree of improvement is inadequate, as indicated by signs of continuing hypermetabolism and super-normal radioiodine uptake by the thyroid gland, a second course of treatment should be administered.

DR. McSWAIN: Dr. Liddle, since the benefit of I^{131} is not immediately apparent, how do you relieve the symptoms in the interim?

DR. LIDDLE: Since there is about a 6 weeks' latent period before radioiodine therapy has any appreciable effect upon the thyrotoxicosis, it is often helpful to use adjunctive antithyroid drugs. In adequate dosage antithyroid drugs will bring about almost complete cessation of hormone synthesis within a few hours. If treatment is sustained, the hypermetabolism will be controlled as soon as the hormone already present in the body fluids and in thyroid gland has been dissipated. Appreciable improvement often occurs within 2 weeks, and euthyroid status may be achieved within 4 to 8 weeks. If one wishes to combine the rapid action of antithyroid drugs with the definitive action of radioiodine, then one may first administer the full therapeutic dose of radioiodine. Three days later, when practically all of the radioiodine has either been stored in the thyroid gland or excreted in the urine, antithyroid drugs may be started. After 6 weeks, the latter may be discontinued; by this time the radiation effect on the thyroid should preclude serious recurrence of the thyrotoxicosis. A short course of treatment with antithyroid drugs entails little risk since agranulocytosis does not occur with less than 1 or 2 months of treatment.

DR. McSWAIN: Will you please distinguish between a "tracer" dose and a "therapeutic" dose?

DR. LIDDLE: A rigid distinction must be maintained between the use of "tracer" doses of I^{131} and "therapeutic" doses. Tracer doses adequate for diagnostic purposes are of the order of 10 microcuries. Therapeutic doses adequate for induction of remission in Graves' disease are of the order of 6000 microcuries. A single tracer dose is attended by no hazard but a therapeutic dose of radioiodine, while quite safe under most circumstances, is absolutely contraindicated in two situations: pregnancy and childhood. During pregnancy, large doses of radioiodine might damage the fetal thyroid. During childhood, large doses of radioiodine should be avoided because of the remote possibility of carcinogenesis. The long latent period between the time of irradiation and the appearance of malignancy makes this latter consideration unimportant

*Roentgen equivalent physicals, a unit of irradiation. It is the tissue equivalent of an R unit when applied to isotopes.

in patients over 40 years of age. Opinion is divided concerning the minimum age for radioiodine therapy. A number of careful thyroidologists feel that radioiodine is the treatment of choice in Graves' disease after the age of 20. It should never be employed in the treatment of Graves' disease prior to the age of 20.

DR. McSWAIN: Now, Dr. Liddle, which patients with thyrotoxicosis do you treat with I¹³¹ and which ones do you exclude?

DR. LIDDLE: The use of therapeutic radioiodine may be regarded as *strongly indicated* in patients with recurrent thyrotoxicosis. A second operation has less chance of success than the first and is attended by greatly increased risks of parathyroidectomy and recurrent laryngeal nerve injury. Radioiodine therapy is also strongly indicated in patients who, because of hypersensitivity to antithyroid drugs or uncooperativeness in taking antithyroid drugs, can neither be treated definitively nor adequately prepared for surgery with these compounds.

It is currently felt in many clinics, including our own, that radioiodine is the treatment of choice in all patients over 40 years of age who have thyrotoxicosis with relatively small, non-nodular glands.

Radioiodine therapy is to be employed only if surgical treatment is not feasible in patients with very large goiters (causing pressure symptoms) and in patients with nodular goiters.

As stated earlier, radioiodine therapy is contraindicated during pregnancy and childhood.

DR. McSWAIN: From the statements of these two internists, it is clear that many patients with thyrotoxicosis now are never seen by a surgeon. However, even now, operation is necessary in some of them. One unequivocal indication for thyroidectomy in toxic goiter is an instance of goiter so large that it should be removed whether it is toxic or not. Because of the possibility of carcinoma, another definite indication is a toxic goiter which contains one or more nodules. Although it is uncommon, carcinoma of the thyroid and hyperthyroidism do co-exist. I agree with Dr. Liddle's statement that a contraindication to thyroidec-

tomy is recurrent hyperthyroidism and it is an almost absolute contraindication if there is recurrent laryngeal nerve paralysis.

Postero-anterior and lateral roentgenograms of the chest and neck should be made in order to determine the presence or absence of substernal extension of the goiter and of pulmonary metastases. The vocal cords should be inspected. If a unilateral cord paralysis is found, one should consider treating the disease by some method other than operation but, if operation must be done, particular care must be taken to preserve the remaining recurrent laryngeal nerve.

DR. BILLINGS: Haven't a great many surgeons stopped doing thyroidectomies under local anesthesia?

DR. McSWAIN: Yes. Formerly, most thyroidectomies in this institution were done under local anesthesia. In recent years, for two reasons, most of us have used inhalation anesthesia. First, with the thiouracil type drugs, it is possible to get patients into a euthyroid state and, second, there have been many recent improvements in anesthesia. In general, we do not use sodium pentothal in operations upon the head and neck.

Although the procedure of thyroidectomy is pretty well standardized, there are a few points in technique which might bear repeating. A collar incision is made 2 or 3 centimeters above the manubrium. An effort is made to find a wrinkle in this area and to make the incision there. The incision is carried through the platysma muscle, clamps applied to it and, in the relatively avascular plane between the platysma and deep cervical fascia, the upper flap is dissected to the thyroid cartilage or slightly above, and the lower one to the suprasternal notch. The fascia is incised in the midline and the strap muscles dissected off of the gland. If the gland is large or difficult to expose, the strap muscles on the right are cut. Some members of our staff dissect out both recurrent laryngeal nerves and others leave some thyroid in the postero-medial aspect of the gland in the region of the tracheo-esophageal groove. Certainly, very little thyroid should be left in situ but it is easier to control recurrent

hyperthyroidism than to control hypoparathyroidism. If the patients have been properly prepared and iodine has been administered for several days before operation, bleeding is usually easy to control. If persistent oozing occurs, Gelfoam can be used. If one thinks that oozing may occur after operation, a drain can be inserted. If a drain is used, it should be brought out through the sternocleidomastoid muscle in the lateral angle of the wound in order to prevent adherence of a flap to the trachea. The lower 1 centimeter of the fascial edges is not sutured so that any accumulation of blood can escape here. In addition to closure of the fascia, we suture the platysma and the skin. Despite the statements of other observers to the contrary, we think that the platysma suture is important. If it is properly done, actually one could omit the skin sutures entirely, although we always do suture the skin too.

Thyroid crisis or storm is rare these days but unfortunately some postoperative complications do occur. Although it may be unnecessary, iodine is given for several days after operation. If the preparation has been by iodine alone, it is continued for 2 months, but if preparation has been by thiouracil drugs and iodine, it is given for only 2 weeks. We keep a tracheostomy set by the patient's bedside for 3 days after operation because bilateral recurrent laryngeal nerve injury or laryngeal spasm from tetany may necessitate its use. Although there is some danger of exsanguination after thyroidec-tomy, the main danger of bleeding is suf-

focation. If a patient says that the dressing is too tight, it should be removed at once and the wound inspected. If there is an alarming accumulation of blood, the sutures should be removed quickly to prevent suffocation. Then bleeding can be controlled by packing until the patient can be returned to the operating room. We remove all sutures by the third postoperative day. If the general condition is satisfactory, discharge can be done 5 to 7 days after operation.

One definite advantage of the treatment of toxic goiter by operation, especially in patients with mild or moderate toxicity, is the brevity of the period from institution of treatment to the time they can be returned to useful work. To some extent, in all instances, this is offset by the expense of hospitalization and operation, the slight, though constant, danger of postoperative complications and the discomfort produced by operation.

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CLINICOPATHOLOGIC CONFERENCE

Acute Methy! Alcohol Poisoning

J. R. Teabeaut, M.D., and Iris A. Pearce, M.D.*

J. P. C., a 52 year old negro man had been well until 18 hours before admission to the John Gaston Hospital October 24, 1955. During the preceding afternoon he had imbibed one-half pint of "moonshine" whiskey. Shortly thereafter, he began vomiting, became blind, and experienced pain in the abdomen and back. These symptoms continued throughout the night. He had been a frequent partaker of alcohol.

Physical examination revealed a restless, confused, adult negro male. Temperature 98.6° F., Pulse 100, Respiration 48. The skin was dry. Extraocular movements were not impaired. Pupils were dilated and did not respond to light. No remarkable changes were noted in the fundi. Lungs were clear to percussion and auscultation. Examination of the heart revealed no cardiac enlargement, murmurs, or abnormal rhythm. Examination of the abdomen revealed no mass, tenderness, or muscle spasm. The liver, kidneys, and spleen were not palpable. The rectal sphincter tone was normal; brown feces were obtained. He moved all extremities. The deep tendon reflexes were slightly hypoactive.

Laboratory studies: catheterized, single urine specimen: SP. G. 1.015. pH 6, protein and sugar reactions were negative, acetone was positive. 1-2 WBC/hpf, occasional RBC, no casts. Blood: Hematocrit 58 vol. %. Hgb. 16 Gm. % WBC 16,200/cu. mm., bands 2, seg. 85, lymph 12, mono 1, sedimentation rate 10 mm/hr., serological test for syphilis negative, CO₂ 8 mEq/L., NPN 37 mg./100 cc., sugar 234 mg./100 cc., Amylase 139 units (Somogyi). Electrocardiogram: Within normal limits.

After the initial blood samples were obtained, 1000 cc. of physiological saline with 100 mg. of thiamine was given in intravenous drip. Nembutal, 0.1 gm., was injected intramuscularly for restlessness. Three hours after admission, shock was manifested by cold, clammy skin and the blood pressure was unobtainable. Therefore, the patient was given intravenously, 15 mg. of mephentermine sulfate (Wyamine), followed by an intravenous drip of 1000 cc. of 5% glucose in water containing 8 mg. of levarterenol bitartrate and 30 mg. of mephentermine sulfate. An elevation of the blood pressure to 240/120 occurred for 2-3 minutes, then stabilized at 140/80. Venocysis was continued with 1000 cc. of M/6 lactate containing 60 mg. of mephentermine sulfate, then 1000 cc. of Ringer's solution. The CO₂ CP at this point, 8 hours after admission, was still 8 mEq/L.

Subsequently, 1000 cc. of M/6 lactate was given.

Ten hours after the episode of shock, pulmonary edema occurred. Therapy to rectify this included: oxygen via nasal catheter at 6 L/min., lanatoside-C 0.8 mg. and meralluride 2 cc. intravenously. During the next six hours, the following were given in sequence: 50 cc. of sodium bicarbonate in 350 cc. of physiological saline, 2 ampules of sodium bicarbonate in 1000 cc. of saline and lanatoside-C 0.8 mg. The patient again went into shock but failed to respond to 8 mg. of levarterenol in 1000 cc. of 5% glucose. During the next hour generalized convulsions occurred and were followed by death 21 hours after admission. Urinary output was said to have been good throughout the course.

DR. IRIS A. PEARCE: This case was characterized by a history of consumption of alcohol, an acute onset of vomiting, blindness and abdominal pain, a rapid course which included acidosis, shock, pulmonary edema terminating in death. Acidosis and dehydration were revealed by a dry skin, rapid pulse and respiration, hemoconcentration and a low CO₂ combining power. Retrobulbar neuritis could be assumed by the findings of blindness, unresponsive, dilated pupils and normal fundi. Broad considerations which might have accounted for such a picture include: metabolic diseases (diabetes mellitus, pancreatitis), infectious diseases (acute with intoxication; and chronic to include syphilis), and poisons. Acute infectious diseases may cause acidosis, dehydration and retobulbar neuritis. No real evidence for specific infection was present in this case other than the elevated white blood count which may result from hemoconcentration. Of chronic infectious processes, syphilis should be considered in the differential diagnosis. However, the central nervous system symptoms were not those of meningeal irritation seen in acute syphilitic meningitis, nor was the character and course of the abdominal pain suggestive of tabetic crises. The serological test for syphilis was negative.

Turning to metabolic disease—unrecognized diabetes mellitus may exist for years until a complication such as protracted vomiting with a reduction of food intake induces ketosis with acidosis and coma. This patient had hyperglycemia, abdominal pain and acetonuria but without glycosuria. The absence of sugar in the urine with hyperglycemia is not unusual in older diabetics

*From Department of Pathology and Medicine, University of Tennessee College of Medicine, Memphis and John Gaston Hospital, Memphis.

with high renal threshold. The degree of hyperglycemia in contrast to the severity of acidosis, the acute onset of blindness and eye signs, and the absence of history of diabetes are features against a diagnosis of diabetes mellitus.

Acute pancreatitis may follow intemperate ingestion of alcohol and be manifested by upper abdominal pain, vomiting which may be severe producing acidosis, and shock. Hyperglycemia may be moderate and associated with an elevated serum amylase. Central nervous system symptoms and signs are not a feature of acute pancreatitis. The absence of an increase in serum amylase within the first six to twenty-four hours of illness, and the presence of central nervous system symptoms almost certainly exclude the possibility of acute pancreatitis in this case.

Finally, the broad category of acute exogenous intoxication—acute poisoning—must be considered. Attention is directed by the history of ingestion of “moonshine” whisky to poisoning by some form of alcohol or adulterant or contaminant incident to the making of whisky. Delirium, restlessness, abdominal pain, vomiting with mild acidosis and visual disturbances usually of hallucinatory type, are features of ethyl alcohol poisoning and when encountered in the alcoholic should not be taken lightly.

However, acute poisoning from ethyl alcohol or its metabolites, e.g., acetaldehyde, do not produce blindness, nor severe acidosis as was displayed in this case.

Contaminant materials incident to the making of “moonshine” whisky include traces of metals (e.g. copper in quantities too small to be significant), and fusel oils. Fusel oil is the term applied to the mixture of higher alcohols and their resultant ethers and esters present in the fresh or “raw” distillates. Concerning fusel oil which is popularly thought to be the chief offender in “moonshine” (actually only about 0.08 cc./100 cc. whisky) the following has been said, “Various British Commissions which have investigated the subject scientifically have all come to the conclusion that the fusel oil is distasteful but not harmful even in the worst specimens examined by them; but the cheaper liquors are likely to be

consumed in larger quantities and in debauches, which properly accounts for their sinister reputation.”

Having passed over ethyl alcoholism and poisoning by various contaminants in “moonshine” whisky as not being operative in this case—are there adulterants which may be incriminated? The most common adulterants of substances used to “cut” moonshine whisky are higher alcohols and methyl alcohol. Of the former, ethylene glycol may produce restlessness, delirium, meningeal irritation and coma. Abdominal pain due to renal involvement may be present. These symptoms are probably related to oxalate crystalline deposits in meninges and renal tubules. Blindness and severe acidosis are not characteristic features of glycol poisoning. Methyl alcohol poisoning characteristically produces visual disturbances ending in blindness, delirium, abdominal pains, severe acidosis and shock. This patient had all of these. Hyperemia of the optic disc and retinal edema, usually encountered when there is visual impairment in methyl alcohol poisoning, were not observed; but the pupils were dilated and did not respond to light. Nor is there data from the laboratory which negates the diagnosis of methyl alcohol poisoning. The elevated hematocrit, hemoglobin and white cell count are probably the result of hemoconcentration incident to prolonged vomiting. In some instances of methyl alcohol poisoning there is reported pancreatitis with derangement of carbohydrate metabolism and severe abdominal pain. The hyperglycemia in the present case associated with a normal serum amylase value does not suggest pancreatitis. This finding may be the result of cerebral edema, or of direct action of methyl alcohol or metabolites on the brain. Two factors contribute to the severe ketosis and acidosis of methyl alcoholism, (1) repeated vomiting, (2) degradation of methanol to formaldehyde and formic acid. The anamnesis, clinical course and laboratory findings of this case are best explained by the diagnosis of acute methyl alcohol poisoning.

For completion, exogenous toxic substances not found in “moonshine” whisky should be mentioned. The one that causes

signs and symptoms similar to those presented is atropine, or related alkaloids. Poisoning by atropine is manifested by marked dryness of mouth and throat, rapid feeble pulse often above 125 and flushed dry skin often with a deep red eruption, in addition to the dilated pupils, impaired vision, and delirium. The lack of these features excludes alkaloidal poisoning. Aconitine may also be excluded as likely agents in this case.

Dr. Pearce's Diagnosis: Acute methyl alcohol poisoning.

Clinical Diagnosis: Acute methyl alcohol poisoning.

Final Pathological Diagnosis: Acute methyl alcohol poisoning.

DR. J. R. TEABEAUT: This case has been chosen for discussion not because there are outstanding pathologic anatomical changes which can be correlated with the clinical signs and symptoms, nor does it present an extraordinary problem in clinical diagnosis. Rather, our purpose is to draw attention to the problem of therapy in acute poisoning in general and specifically to acute methyl alcohol poisoning. While there is no great number of deaths attributable to acute poisoning centered in one area, the aggregate of all isolated instances of poisoning throughout the state is considerable. It should be remembered that poisoning is usually a single episodic stimulus and that the victim usually is a healthy individual who, if he can be gotten over the acute intoxicating stage, has an excellent prognosis for return to normal health.

Except for the ocular changes, which will be mentioned later, there are few pathologic anatomic changes specific for methyl alcohol poisoning. In the present case, the body had a light red lividity in the dependent portions. The musculature and blood also were light red. This feature has been mentioned as being similar to the "cherry red" color of blood and tissues seen in carbon monoxide poisoning. At times methyl alcohol is said to produce methemoglobin giving to the body a brownish-red appearance. Mild pulmonary edema and hyperemia were present. There was hyperemia of the gastro-intestinal tract. The brain weighed 1700 grams, was wet and

swollen, and showed suffusion of light red blood over the pia-arachnoid. Gross examination of a removed eye showed no abnormality. Liver, pancreas, and kidneys were not significantly changed.

Microscopically, the parenchymal organs showed no definitive alterations. Sections of the brain showed increased space about vessels, swollen neural elements and occasional neurones with acute degenerative changes in the form of eosinophilia of cytoplasm, pyknosis of nucleus and swelling of cell cytoplasm. Scant, non-specific, meningeal cellular infiltrates were present. Focal petechiae were occasionally encountered in sections from the cerebral cortex. Histologic sections of the eye showed edema of the layers of the retina with accumulation of pink granular fibrinous fluid exudate and mild early degenerative changes in ganglion cells of the retina. No definitive disintegrative changes in the fibers of the optic nerves were discernible.

Post mortem methyl alcohol determinations revealed:

Blood: 0.65 mg/cc. Spinal Fluid: 0.8 mg/cc. Urine: 0.9 mg/cc. Vitreous: 0.75 mg/cc.

Methyl alcohol is said to be three to five times as toxic as ethyl alcohol. Its acute toxic effects are considerably more damaging and prolonged. There is usually a delay of 12-24 hours after ingestion before symptoms appear although the interval may be only a matter of hours or delayed for three days. The elimination of methanol is similar to ethanol, but oxidation to formaldehyde and formic acid, although perhaps by congenerous enzyme systems, is much slower in the case of methanol. For this reason a greater percentage of methanol is excreted unchanged through the lungs and in the urine. Complete elimination of methyl alcohol and its products may require 4-5 days after symptoms appear.

The profound acidosis has been attributed largely to the relatively strong acid, formic acid. Rohr suggests that methyl alcohol or a product thereof renders inactive the oxidase system and thereby the retinal lesion is anoxic rather than a direct chemical injury. With effective treatment partial or complete recovery of visual acuity may

be expected although in an occasional instance there is persistent loss of vision.

The disturbance in carbohydrate metabolism has been associated anatomically with acute pancreatitis by some observers. We have not encountered definitive anatomic evidence of this in our material, although hyperglycemia and elevated serum amylase levels have been observed.

Dr. Pearce, would you comment on therapy?

DR. PEARCE: The two primary objectives are (1) correction of the acidosis and (2) increase elimination of remaining methanol.

The acidosis is usually severe and requires large doses of alkali for correction. In this case a total of only 11.25 gms. of bicarbonate was given, during the 21 hour hospital period. The CO_2 level remained 8 mEq/L. In reported adequately treated cases with similar initial CO_2 levels, bicarbonate in amounts of 700 grams or more intravenously have been necessary over a 24 hour period to correct the CO_2 . The point is, that one need not be afraid of giving too much alkali in methyl alcohol poisoning. Large doses are required. M/6 lactate or similar

solutions are ineffective and lead to false security. The amount of bicarbonate required depends on the CO_2 response. If ampules of bicarbonate are not available the use of nonsterile kitchen baking soda in sterile aqueous solution is a satisfactory expediency. In the Atlanta epidemic of methanol poisoning this procedure had to be employed. There were no adverse reactions.

Concerning increasing the elimination of methanol, an indwelling urinary catheter prevents resorption by the bladder of excreted alcohol as does continuous gastric suction. Bicarbonate can be put in the stomach intermittently through the same tube. Some advocate giving ethyl alcohol to allegedly compete with the same enzyme systems used for methyl alcohol oxidation, thereby decreasing the amounts of formaldehyde and formic acid formed. The evidence for this is equivocal due to lack of controlled data on humans.

Finally, after the patient is conscious and acidosis abated, oral bicarbonate intake should be continued for four or five days to prevent relapse of acidosis since elimination of methyl alcohol requires several days.

Aneurysm of the Aorta Treated by Resection.

Michael E. De Bakey, M.D., Denton A. Cooley, M.D., and Oscar Creech, Jr., M.D., J.A.M.A. 163:1439, 1957.

The average period of survival after diagnosis of aortic aneurysms is from one to two years in the absence of definitive treatment. The surgical approach consists essentially of extirpation of the diseased part, with restoration of normal function by repair or replacement with a graft. The experience reported on comprises 313 cases.

Eighty-three of the aneurysms involved the thoracic aorta. Twenty-four sacciform aneurysms, most of syphilitic origin, were treated by the application of a clamp to the base, excision, and lateral suture. There were 9 deaths, with the major cause being heart failure. Fusiform aneurysms necessitate resection and restoration of continuity by a graft. Temporary shunts are used in those proximal to the subclavian artery to prevent ischemia and heart strain. Spinal cord damage can be minimized in the cases of more proximal aneurysms of the descending thoracic aorta by the use of hypothermia. There were 14 deaths among the group of 43 patients with fusiform aneurysms, again with the major cause being heart failure. The 6 remaining thoracic aneurysms also extended down to involve the major abdominal visceral branches. Utilizing temporary shunts to

minimize ischemia, 4 of the 6 were treated successfully by resection and grafting.

The prognosis of untreated dissecting aneurysms is grave, with a rapidly fatal outcome in 75-90%. Sixteen cases were treated surgically, with success in 13. The essential feature of the operative procedure is conversion of the distal lumen into a single channel by suture of the outer to the inner layer. When accessible, the area of origin of the dissection is resected with replacement by a graft. This was possible in 12 of the 16 cases.

Aneurysms of the abdominal aorta present a simpler problem than those of the thoracic aorta. Selection of patients for operation in this series depended solely on the diagnosis of aneurysm, with the occasional exception of serious disabling cerebral, cardiac or renal disturbances. The operative procedure consists of resection and grafting. It has been associated with a progressive decrease in mortality from an early 25% to 2% in the most recent experience. Recovery of two-thirds of patients with ruptured aortic aneurysms is particularly striking. Although the experience with surgery of aortic aneurysms is relatively recent, comparison with untreated cases indicates a significant increase in survival rates. (Abstracted for the Middle Tennessee Heart Association by William R. Cate, Jr., M.D., Nashville.)

President's Letter

TRY TO KNOW YOUR STATE ASSOCIATION BETTER



J. PAUL BAIRD

Upon assumption to this office I proposed to initiate a triad of articles for this page based upon a plea to members to become better acquainted with the purposes, functions and administration of the State Organization. Having written on the House of Delegates and the Council I would like to conclude the series by summarizing the highly important functions of your Board of Trustees.

The Trustees of the Association represent the Executive Board or department which interprets and determines policy originating in Committee and legislated through the House of Delegates. They conduct the necessary business of the Association as instructed by your elected representatives, and they have entire control over the publications and financial contracts of the JOURNAL.

The Composition of the Board of Trustees as called for in the Constitution is made up of six elected members, two from each grand division of the State, the President, the immediate past President, the President-Elect, the Speaker of the House and the Secretary-Editor. The elected Trustees serve for a period of three years. In this manner the provision is made for lengthy terms of members and so that a majority will not be replaced in any one year. This gives a background of stability and conservative consideration which your Board is expected to employ in pursuance of its manifold activities.

These eleven men organize by the election of a chairman who is, ex officio, the Treasurer of the Association. In their hands you have placed the responsibility of the administration of your business affairs, the execution of your policy, the custody of your funds, the publication of your official periodical, the selection of your Stand-

ing Committees, the arrangements for Annual meetings and the selection and pay scale of the Executive-Secretary and the Public Relations Director. *Quite a job* it is when one considers each detailed feature.

It is a heavy assignment to be given custodianship of your funds and to provide for proper auditing. The expenditures necessarily have to be granted judiciously for the revenue provides a limited budget since our dues are lower than any other state except one. For this reason the Board frequently has to refuse requests by Committees for funds which would actually facilitate suitable working conditions for the Committee.

Your Board assumes an enormous task, arduous and time consuming, when it puts into execution, the official policy legislated through the House of Delegates, and when it gives consideration to the many recommendations and resolutions coming from Committees for appropriate action. It is expected also that the Board shall take the time to determine the wishes and aims of individual members and advise and aid them in selecting the proper channels for discussion and administration.

All of these things have to be given the time and thought they deserve before the Board commits the Association legally to official endorsement of policy, to the signing of contracts, statements to the press, and upon any action taken for the public health and welfare in the promotion of better understanding between the public and the profession.

If this article brings some new thought to a few of the many duties of your Board of Trustees, which could otherwise be obtained by detailed study of the Constitution, it shall have served its purpose in helping you to appreciate and know your State Organization better.

Paul Baird

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JULY, 1957

EDITORIAL

PRESCALENE LYMPH NODE BIOPSY

The employment of large scale survey of pulmonary lesions by miniature X-rays has served as a useful method of locating pulmonary lesions that usually are asymptomatic. In addition, the comment relative to the relationship of smoking to the incidence of carcinoma of the lung, has heightened interest in this method of examination and stimulated the cooperation of the public in general.

Frequently as the result of the above mentioned procedures, one is left with a positive finding of a mediastinal or pulmonary lesion of undetermined etiology. Often the ordinary methods of differential diagnosis such as bronchoscopic examination, study of the sputum, and careful detailed X-ray investigation, leave a doubtful label on the newly discovered lesion. The debate then is prompted, as to whether or not an exploratory thoracotomy, or open-

ing of the mediastinum is indicated. This procedure, though usually a harmless one, is none-the-less a major surgical procedure. During the last few years a simple, safe surgical procedure has been advocated that may help establish the diagnosis and yet cause the patient very little discomfort, expense or inconvenience. This is the procedure of prescalene lymph node biopsy, first advocated and reported in 1949 by A. C. Daniels.¹

Since that time, one gathers that this procedure has been frequently overlooked and neglected.

Recently Felton and Spear² have reviewed the literature relative to this procedure, and reported thirty-five patients of their own, in whom this technic was employed. In 455 patients gathered from the literature positive biopsies were obtained in 31.8 per cent. These diagnoses include carcinoma of the lung, pleura, esophagus, and thyroid, lymphoma, and inflammatory diseases both tuberculosis, sarcoid, and non-specific processes.

It is important to note that often these nodes were found to be the seat of disease even when no lymph nodes were palpable in the neck. Therefore, the procedure may be of particular value even in the unsuspected case. In addition since involvement of the prescalene lymph nodes with bronchogenic carcinoma indicates that the patient is beyond the realm of surgical curability, major futile surgery may be either prevented or carried out with greater circumspection.

There are possible complications to this minor procedure, particularly pneumothorax from puncture of the apical pleura, or phrenic or brachial plexus nerve injury, but in most of the series reported no problems arose.

It seems clear from the meagre number of patients reported in the literature, (455) after eight years of employment of the

¹Method of Biopsy Useful in Diagnosing Certain Intrathoracic Diseases. Daniels, A. C., Dis. Chest 16:360-366, September, 1949.

²Cervical Mediastinal Lymph Node Biopsy in Evaluating Intrathoracic Disease. Felton, W. L., and Spear, H. C., J.A.M.A. 163:1252-1254, April 6, 1957

method, that the information relative to the value of this procedure needs wider attention.

ALBERT WEINSTEIN

★

"MEDICAL SERVICES FOR RURAL AREAS"

This editorial comment is also in the nature of a book review since the above is the title of a booklet by Willman A. Massie,* published by the Harvard University Press for The Commonwealth Fund. It represents one of the few, or probably the only book on the activities of a state medical society published under auspices other than those of organized medicine.

The booklet tells the story of the one activity of the Tennessee State Medical Association which has attracted nation-wide attention. It has been used as a story in LIFE and it has been referred to in the writings of those who face the problems of medical care in its social and economic implications. And now this activity is recorded permanently in book form to be referred to, undoubtedly many times, in future discussions of the problems of medical care and the place of the profession and of government in providing such care.

Over the past five years the JOURNAL has on a number of occasions called attention to the Tennessee Medical Foundation and its Committee on Health and Medical Care. This was appointed in 1952 in answer to the gauntlet thrown down by the A.M.A. Survey Team following its recognition of the low level of medical care in the coal-mining areas of Kentucky, Tennessee and West Virginia. Our Association was the only one accepting the challenge. It was this action by our profession which led The Commonwealth Fund to contribute money for the project. Some of the members of its Board were frankly amazed at the initiative taken by the medical profession in this field.

The first project of the Tennessee Medical Foundation centered on Pruden Valley, because the conditions in this area pointed

up the blackest findings of the A.M.A. Survey in Tennessee. This was the project that had a human interest story and thus appealed to LIFE magazine. It is extremely unfortunate that Pruden Valley also became fixedly associated with the Medical Foundation in the minds of Tennessee doctors. Too few of the profession know of the aid given by the Committee on Health and Medical Care to the Wartburg area, the La Follette area, the Palmer area, the Decatur area and the Oneida area. Few know of the consultant service provided in some of these areas to provide for better medical care of their inhabitants. To be sure many of our doctors have contributed their ten dollars annually to the Foundation, but all too often in blind faith because it represented an activity of the Tennessee State Medical Association rather than with thought as to its purposes.

In any event the profession of Tennessee may feel proud that a permanent record has been made of its thinking relative to rural health. It is a record of probably the most independent and outstanding piece of *public service* ever rendered by a state medical society.

R. H. K.

DEATHS

Dr. C. Herschel Barnwell, 52, Chattanooga, died June 2nd at his farm on Little Sand Mountain near Summerville, Georgia.

Dr. Thomas Decatur Wilson, 81, retired physician of Macon County, died May 16th in a Nashville Nursing Home.

Dr. H. E. Christenberry, 72, Knoxville, died May 20th at Baptist Hospital in Knoxville. His death was due to a heart attack.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Roane County Medical Society

The Society held its regular dinner meeting on June 25th in the dining room of the Oak Ridge Hospital. The program consisted of a panel discussion entitled "The Social Security Laws and the Jenkins-Keogh Bill as They Relate to Doctors." Speakers were

*Massie, Willman A.: Medical Services for Rural Areas. (Published for The Commonwealth Fund.) Cambridge, Mass., 1957. Harvard University Press. Price \$1.25.

Mr. Charles L. Cornelius, attorney for the Tennessee State Medical Association, Nashville and Mr. Jack Ballentine, Executive Secretary of TSMA.

Memphis-Shelby County Medical Society

The Society's monthly meeting in April was conducted on April 5th in the auditorium of the Institute of Pathology. The speaker presenting the scientific program was Dr. Homer W. Smith, professor of Physiology and director of Physiological Laboratories of the New York University College of Medicine. He was introduced by Dr. Sam Raines.

Dr. Smith gave an enlightening talk on certain pathological changes in the kidney. A question and answer period followed his presentation.

Marshall County Medical Society

At a recent meeting of the Marshall County Medical Society, the membership adopted a motion declaring the months of May and June to be time in which they would participate in a special drive aimed at the widest possible application of the Salk Polio Vaccine. The motion stated that everyone would be strongly encouraged to see his physician and obtain the vaccine in order to be protected against polio. All persons up to the age of 40 years were urged to take the shots.

Blount County Medical Society

The monthly meeting of the Society was conducted on May 17th. Dr. Leandro M. Tocantins, nationally known for his work in bleeding diseases, addressed the society. Dr. Tocantins is Social Professor of Medicine at Jefferson Medical College and Hospital in Philadelphia and Director of the Division of Hematology. Doctors from Knoxville and Oak Ridge were invited to hear Dr. Tocantins speak.

Chattanooga-Hamilton County Medical Society

A medical-legal seminar was held on June 5th in the auditorium of the Interstate Building under the joint sponsorship of the Chattanooga-Hamilton County Medical Society and the Chattanooga Bar Association. The group was addressed by Judge Fred

Ballard, Attorney Bruce Bishop and Dr. Edward Newell, Jr.

A film entitled "The Medical Witness" was shown.

Tri-County Medical Society

The regular quarterly meeting of the Tri-County Medical Society which includes McMinn, Monroe and Loudon Counties, was held on April 9th at Atkins Grill in Sweetwater. Guest speaker was Dr. Robert H. Harolson, Jr., of Maryville whose subject was "Problems in Spinal Anesthesia."

Nashville Academy of Medicine and Davidson County Medical Society

The regular monthly meeting of the Society was held on June 11th at Vanderbilt Hospital following a dinner in the cafeteria. The scientific program was presented by Dr. Carlton Ernstene, chairman of the AMA's section on Internal Medicine. His discussion was entitled "Differential Diagnosis of the Pain of Cardiac Heart Disease." Dr. Ernstene is past chairman of the American Heart Association's Section on Clinical Cardiology. The meeting was conducted in the Vanderbilt Hospital amphitheatre.

Knoxville Academy of Medicine

At the monthly meeting conducted in the Academy of Medicine building on June 11th, an interesting case report was given by Dr. John Mohr and Dr. Victor Klein, Jr. The scientific program was presented by Dr. Robert Higgins whose subject was "Changing Concepts in the Management of Prostatic Enlargement." Discussion was led by Dr. George Mahon and Dr. William Muse.

Putnam County Medical Society

Members of the Putnam County Medical Society at a recent meeting voted to recommend that all persons between 6 months and 40 years of age receive polio immunization consisting of three shots.

The membership discussed the holding of public clinics at clubs, factories and other public places.

Consolidated Medical Assembly

Three instructors of the University of Tennessee School of Medicine addressed

the Consolidated Medical Assembly of West Tennessee at its regular session on June 4th at the New Southern Hotel. Dr. Pervis Milnor, instructor of medicine at U-T and member of the medical staff at John Gaston Hospital discussed "Puzzling Problems in Cardiology." Dr. Fred Freidman of Jackson discussed the paper.

"Reconstruction of the Esophagus" was presented by Dr. Russell Patterson, assistant professor of surgery at U-T, chief surgeon of Baptist Memorial Hospital, and attending surgeon of John Gaston. Dr. Gwin Robbins, assistant professor of surgery at U-T also discussed the subject. The discussion was led by Dr. Hughes Chandler of Jackson.

Upper Cumberland Medical Society

The Sixty-Third Annual Program of the Society was held at Red Boiling Springs, June 25-26, with the President, Dr. Jack Clark of Cookeville, presiding.

The program consisted of the following papers:

"Comments by a Country Doctor," by Dr. R. C. Gaw, Gainesboro.

"Use of the Right Colon in Reconstructing the Esophagus," by Dr. Walter Diveley, Nashville.

"The Billroth I Gastric Resection. Indications and Results," by Dr. William R. Cate, Jr., Nashville.

"Repair of Injuries to Major Ligaments of the Knee," by Dr. John J. Killeffer, Chattanooga.

"Drug Eruptions," by Dr. Robert Buchanan, Jr., Nashville.

"Your Public Health Department," by Dr. R. H. Hutcheson, Nashville.

"Insulin—A Discussion of Various Types and Indications for Its Use," by Dr. Albert Weinstein, Nashville.

"Observations on Reconstruction in Facial Injuries by Pedicle Flaps," by Dr. Beverly Douglas, Nashville.

"Hypnotism: Its Application To Psychiatry and To General Medicine and Surgery," by Dr. Henry B. Brackin, Jr., Nashville.

"Slide on Trip to Europe—Medical Institutions," by Dr. C. C. Howard, Glasgow, Ky.

"Case Reports," by Dr. Robert McKinley, Glasgow, Ky.

"Intussusception," by Dr. Oscar F. Noel, Nashville.

"Treatment of Common Cardiac Arrhythmias," by Dr. Crawford W. Adams, Nashville.

"Changing Observations and Concepts in the Management of Heart Disease," by Dr. R. C. Cash, Lebanon.

"Cancer Problems in 100 Bed Hospital," by Dr. Henry Harris, Bowling Green, Ky.

"Some of Those Things," by Dr. J. P. Sloan, Jamestown.

NATIONAL NEWS

S. 844, a Bill to Remember

Make no mistake about it, the drive to nationalize medicine is gathering strength and advocates. Senate Bill S. 844 to provide a program for national health insurance and for other purposes was introduced in the Senate on January 25th, 1957. Actually the plan is a rehash of the Wagner-Murray-Dingell bill. This bill was presented in spite of 50-plus hearings on similar bills of the last 14 years, during which competent witness literally tore apart the veil of validity.

Basically, the idea would be a doctor for everyone and everyone for a doctor. From this medical grab-bag all would be expected to pick a physician. If his family doctor refuses to sign, the patient must select the name of someone on the public list. Should the patient refuse to sign with a social security doctor in an area where payment is by capitation, he will after due notice be allocated a physician in the service area.

Having disposed of patient, doctor, and free enterprise, one might examine the ultimate authority in the proposed bill. This would repose under HEW in a National Health Insurance Board composed of five members, three to be appointed by the President with consent of Congress and the other two to be the surgeon general of the Public Health Service and the commissioner of Social Security. Of those appointed, at least one member would be required to be a doctor of medicine. Thus American medicine would have a one-fifth voice on the highest federal board in the National Health Service.

Whether the American medical profession will allow the destruction of voluntary insurance plans and turn over control of practice, patient, health personnel, research and professional teaching institutions to a federal bureau is, in the last analysis, in the hands of the individual physician and his united strength.

The challenge in bill S. 844 may come sooner than anyone might think.

The Month in Washington

The 85th Congress is in the final few weeks of its first session with prospects that it will enact few major medical bills this year, but that next year will be a different story. On at least half a dozen important measures action has been postponed, with the understanding that the issues will be fought out in 1958.

Circumstances prevented any delay on one bill that is of considerable importance to the younger doctors—a new version of the doctor draft act. It had to be enacted by July 1, the Defense Department insisted, or not enough doctors would be available to maintain the military medical services at an acceptable level.

The problem is that the Armed Forces require a higher ratio of physicians to troops than exists between physicians and the general population. Without some special law, the services would either have to make out with fewer doctors than they say they need, or draft thousands of non-physicians merely to obtain the doctors who are in the particular age groups.

This scheme was devised: Amendment of the regular draft act to allow the call up, to age 35, of the necessary numbers of doctors from among those who had received educational deferments; they could be called because they are physicians, not because they are of a certain age. Also, the national, state and local Medical Advisory Committees of Selective Service would be continued as would a number of provisions in the original act that protect the rights of drafted doctors.

As Congress moved toward adjournment, prospects also were that it would enact a bill to help out some states caught in a financial squeeze because of a new act, passed last year but not scheduled to go into effect until July 1, 1957, to increase federal payments for the medical care of persons on the state-federal public assistance rolls.

Under the old system, states could use the U. S. dollars to pay directly to the individuals for their medical care, or directly to the vendors of medical service—hospitals, physicians, dentists. Many states, adopting the second plan in all or part of their counties, used the federal money to help maintain pooled funds, which support various medical care programs.

All U. S. money paid out under the new act must be used in the form of vendor payments—that is, not turned over directly to the public assistance cases. At the same time, the law as originally passed stipulated that any money received under the old plan henceforth would have to be handled as “recipient payments,” that is going directly to the persons on public assistance rolls.

A number of states thus faced the prospects of drastically revising their carefully-established medical care programs or sacrificing large amounts of federal money. Congress came to their rescue by means of a bill that would allow them to use the old money as before, yet take full advantage of the new federal program.

In the closing weeks of the session, however, two major medical bills were making little, if any progress—those for federal grants to medical colleges to build teaching facilities and for initiating a program of health insurance for federal civilian employees.

A number of bills had been introduced on aid to medical education, representing virtually all the view points in Congress and the administration, but nothing much was happening. Here one factor was the economy drive, which was not too successful in cutting the administration's health budget, yet which virtually precluded any new programs involving large appropriations.

On federal employee health insurance, these long-standing differences of opinion still blocked any compromise: Should emphasis be on basic health insurance, or on major medical (catastrophic) coverage? Should U. S. payroll deductions be permitted, or would this open the door to demands for many other payroll deductions, such as for union dues? What safeguards could be set up to prevent either the commercial insurance companies or the nonprofit organizations (union plans and Blue Cross-Shield) from gaining a dominant position?

On these two major bills—as well as on many others, sponsors were not too discouraged. Already they were making plans to press them still more vigorously next year when Congress, looking toward the fall elections, may be more responsive.

MEDICAL NEWS IN TENNESSEE

New Principles of Medical Ethics

The House of Delegates of the American Medical Association approved the long discussed revision of the Principles of Medical Ethics, originally submitted at the 1956 annual meeting in Chicago.

These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

The revised principles are as follows:

Section 1.—The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

Section 2.—Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

Section 3.—A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

Section 4.—The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

Section 5.—A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

Section 6.—A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

Section 7.—In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

Section 8.—A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

Section 9.—A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the defi-

ciencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

Section 10.—The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community.

Blount County Leads in Salk Vaccine Shots

Blount County leads all counties in East Tennessee in the number of children who have received two shots of salk vaccine, according to Dr. Alex B. Shipley, East Tennessee Director of the State Health Department. In the group from ages 6 through 20, some 78% of those eligible have received one shot. Second shots have been given to 67.1% of the group.

State Legislative Council Committee Studies Practice of Psychiatry and Psychology

The State Legislative Council Committee heard arguments from representatives of the Tennessee State Medical Association and representatives of the Psychologists at a recent hearing. The study is based on the Law which governs the practice of psychology and the Board of Examiners in that field.

In the Legislature earlier this year, a joint resolution was adopted directing that the Legislative Council Committee study the relationship affecting the Law relative to the practice of psychology and psychiatry.

The Psychology Law states that the Psychologists or Psychological examiners who engage in psychotherapy must establish and maintain effective intercommunication with a psychologically oriented physician, usually a psychiatrist, to make provision for the diagnosis and treatment of medical problems by a physician with an unlimited license to practice the healing arts in this State.

The dispute between the psychiatrists and

psychologists is not peculiar to Tennessee, but has reached the national level. The National Association of both organizations have named committees to work out a solution to this problem. It has been suggested that the State Legislative Council await the report from the National professional study committees.

The resolution sponsored by the Tennessee State Medical Association and introduced in the 1957 Legislature requested that the Legislative Council Committee study this problem and report to the next General Assembly in 1959, with some recommendations for amending the present psychology practice act which established the Board of Examiners in that field.

Symposium on Medical and Surgical Emergencies

Some 250 doctors from East Tennessee, Southeast Kentucky and Southwest Virginia registered for a day-long program of medical talks at Deane Hill Country Club in Knoxville on May 16th. The symposium was sponsored by Knoxville Academy of Medicine and Lederle Laboratories. The event was a highlight of the Academy's 100th anniversary observance.

Seven physician-educators from all parts of the country talked on emergencies of the heart, newborn, pregnancy, head, chest and abdomen and diagnosis of coma.

Speakers for the scientific meeting included Dr. R. Bruce Logue, cardiologist and associate professor of medicine at Emory University, Emory, Georgia; Dr. James G. Hughes, professor of pediatrics at U-T medical school in Memphis; Dr. Edward L. Bortz, chief of service at Philadelphia's Lankenau Hospital; Dr. M. Edward Davis, chief of service of the Chicago Lying-in Hospital; Dr. Thomas H. Burford, Washington University Hospital, St. Louis; Dr. J. Garrott Allen, professor of surgery at the University of Chicago and Dr. Donald D. Matson, a member of the faculty of Harvard Medical School.

PERSONAL NEWS

Dr. E. Converse Peirce II, Knoxville, presented a paper entitled "Intrapericardial Bronchiogenic

Cysts, Embryological and Gross Anatomical Aspects" at the annual meeting of the American Association of Anatomists held in Baltimore, Maryland. He also presented a paper on June 6 at the International Medical and Surgical Festival in Turin, Italy.

Dr. C. Harwell Dabbs, Knoxville, gave a paper before the American Association of Thoracic Surgery entitled "Intrapericardial Bronchiogenic Cysts."

Dr. D. F. Crowe is now a member of the Staff of the Henry County General Hospital in Paris, in charge of the Department of Radiology.

Dr. C. H. Glover, Memphis, has been elected Chief of Staff of the Memphis Ear, Eye, Nose & Throat Hospital. **Dr. Thomas M. Jackson**, Memphis, was named Vice-Chief of Staff and **Dr. Fred C. Wallace** was elected Secretary.

Dr. J. E. Donlan, Kingsport, has become associated with Munal Clinic.

Dr. George E. Spangler, Humboldt, has been elected President of the St. Mary's Hospital staff. **Dr. Edward C. Barker** of Trenton is Vice-President and **Dr. Charles W. Davis** of Humboldt is Secretary.

Dr. W. N. Cook, Columbia, Maury County Health Officer, has been awarded a scholarship for a full academic year of study at Harvard University. His period of study will begin in September.

Dr. Elizabeth Ann Hallett announces the opening of an office for the practice of medicine at Soddy, Tennessee.

Dr. Rollin A. Daniel, Jr., Nashville, has been elected a director of the Vanderbilt University Alumni Association.

Dr. Albert S. Easley, Chattanooga, has been elected secretary of the Board of Governors of the American Diabetes Association.

Dr. W. G. Rhea, Paris, has been elected President of the West Tennessee Medical & Surgical Association. **Dr. Kenneth G. Ross** of Paris was chosen as an officer and director and others were **Dr. M. R. Bowers** of Dresden, **Dr. E. E. Edwards** of McKenzie and **Dr. Oliver Graves** of Jackson.

Dr. William W. Pugh, Jr., Oak Ridge, was a recent speaker before the Childbirth Education Association. His subject was "Doctor-Patient Relationship."

Dr. W. W. Tribby, Memphis, has been elected President of the Memphis Lions Club.

Dr. Curtis P. McCammon, Wartburg, has been named head of the Industrial Hygiene Division of the State Health Department, effective July 1.

Dr. P. J. Flippin, Decherd, has been named medical branch manager with ARO, Inc. at Tullahoma.

Dr. Philip Livingston, Chattanooga, has been installed as a Fellow in the American College of Cardiology.

Dr. Robert E. Merrill, Tullahoma, has resigned as director of the Coffee and Franklin County Health Departments to become a member of the faculty at the Vanderbilt University School of Medicine.

Dr. Clarence H. Farrar has been elected Mayor of Manchester.

Dr. David Taylor, Dyersburg, was the speaker for the recent meeting of the fourteenth area of the Licensed Practical Nurses Association.

The Association of Surgeons of the Southern Railway System elected **Dr. Cecil E. Newell** of Chattanooga as President. Also elected were **Dr. Battle Malone, II**, Memphis, First Vice-President and **Dr. J. Marsh Frere, Sr.**, Chattanooga, was re-elected Secretary.

Dr. J. Andrew Mayer, Nashville, was a recent lecturer before the Senior Citizens' organization. His subject was "Prevention of Accidents in Later Years."

Dr. Gene Kistler, Chattanooga, recently addressed the Chattanooga-Hamilton County Health Council.

Dr. William F. Sheridan, Jr., Nashville, recently addressed the Tullahoma Sub-section of American Institute of Industrial Engineers. His subject was "Some Medical Aspects of Electricity."

Dr. T. R. Bowers and **Dr. Fred Vance, Jr.**, Bristol, have been named Co-chairmen of the Bristol unit of the Crippled Children's Society.

Dr. Richard Bucher, Elizabethton, has joined the staff of the medical clinic. He will be associated with **Dr. D. M. Sholes**.

Dr. J. C. Armstrong, Waverly, has been elected Mayor of that city.

Dr. M. A. Blanton, Jr., Union City, has been appointed to the University of Tennessee Athletic Council.

Dr. Robert W. Quinn, Nashville, has been installed as President of the Middle Tennessee Heart Association. He succeeds **Dr. Laurence A. Grossman**.

Dr. J. A. Hixson, Chattanooga, was a recent speaker on a television program entitled "Your Doctor Speaking."

Dr. Carl A. Hartung, Chattanooga, recently addressed the Hamilton County Tuberculosis Association.

Dr. J. Madison Dill, Murfreesboro, has been elected a member of the Board of Directors of the Middle Tennessee Heart Association.

Dr. Clarence Shaw, Chattanooga, announces the removal of his offices to 517 Doctors Bldg. located on McCallie Avenue in Chattanooga. His practice is limited to dermatology and syphilology.

historical development of this mammoth institution.

It is enjoyable reading for anyone who has worked at Bellevue and a must for anyone planning to accept a position there. It is simply written for lay consumption, tends to ramble and is not indexed. It is therefore better read as a whole than used as a reference text.

H. VIRGINIA SHATTUCK

The Truth About Cancer. By Charles S. Cameron, M.D. 268 pages, illustrated. Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1956. Price \$4.95.

The current new literature has been filled with material on "CANCER" and its victims. Anything that deals with cancer is worthy of a small blurb, and the fate of any person in the public eye, who might be unfortunate enough to have this diagnosis, is sure to be the item of repeated progress notices. The end result has been that the thinking and reading American public has had a smattering of disjointed information from both authoritative and sensationalist sources. Opinions which they may have formed through choice or necessity are guided by a strange combination of the advice of their physician, their acquaintances, and the printed matter available to them. While this book could hardly be described in courtroom terms as "the whole truth," it would certainly be fair to say that it is "nothing but the truth."

Dr. Cameron launches forth on a tremendously difficult task but does it in an orderly fashion, and his work represents what is now the best book for general information on cancer and its associated problems. He undertakes to explain what cancer is, what its different forms are, why we hear more about cancer today than in years past, and what each person should do to reduce their chances of dying of cancer. He approaches it in a factual fashion, and there are no punches pulled. The language is at times a bit technical but still is concise and readable.

There are many points brought home in a forceful fashion. As has been true for other diseases in the past, cancer is not a disease of civilization. Civilized peoples are living longer, and cancer is most frequently found in the older portion of our population. It is a disease which is more generally admitted now than in years past. It has not been long since the family who allowed the statement to appear in an obituary that their loved one had died of cancer would have been thought mentally unsound. Sound knowledge of the type displayed by Dr. Cameron will help to change this meaning of the word. We now diagnose cancer, where years ago the accuracy of diagnosis was impossible or exceedingly difficult.

Because of the cloud that has hovered over the sufferer from cancer, there has accumulated a wealth of lore and fable about the disease. The facts are these: There is no confirmed instance in which cancer has ever been communicated from one person to another; What one eats has little

BOOK REVIEW

Bellevue is my Home, Salvatore R. Cutola, M.D., Doubleday & Company, Garden City, N. Y., 1956. Price \$4.00.

A dedicated man of medicine describes his life and gives a comprehensive picture of the work of a modern city hospital. The author emphasized the satisfactions in such work, cites some of the problems and includes frequent references to the

or nothing to do with whether he or she will ever get cancer; If hereditary influences play a part in the disease at all, they simply serve to set the stage rather than being a direct cause.

Probably the two most important pieces of factual information that are brought out concern establishing a diagnosis of cancer and the present status of cancer treatment. The only strictly reliable basis for the diagnosis of cancer is the biopsy or microscopic tissue examination. If there were never another new fact learned about cancer, it would still be possible to save twice as many lives by making the best use of that which is already known.

For those who are interested in the subject, this book will bring new facts as well as some reassurance. It does much to dispell clouds of misinformation and is an easy source of modern knowledge on its subject.

BENJAMIN F. BYRD, JR., M.D.

Hunterdon Medical Center. By Ray E. Trussell, M.D., Executive Officer of the Columbia University School of Public Health and Administrative Medicine. 231 pages. Published for the Commonwealth Fund by Harvard University Press, Cambridge, Massachusetts, 1956. Price: \$3.75.

This book is an extremely interesting account of what one rural community did to provide adequate medical care for its people. When the Hunterdon County (New Jersey) Board of Agriculture was assaying its needs in 1946 after World War II had come to a close, medical care was high on the list. From that point on to the time seven years later when the doors of the Hunterdon County Medical Center were opened, a fascinating story of dogged determination by the citizenry of that county unfolds step by step. The people did not want just a mortar and brick structure modelled on the usual type of county hospital. They wanted a medical center that would provide not only the services required by the sick, but also those required by the well to keep them well; in a word, preventive services. They wanted a center in which their community doctors, all general practitioners, could continue to care for them when they needed to be hospitalized, but in which specialists would be available to provide expert diagnostic and therapeutic services as required. They wanted a center that could bring to rural people the quality and quantity of medical care usually associated only with large urban centers.

These were ambitious goals, which at times seemed impossible of achievement in their entirety. Yet, beginning with a careful survey of community medical resources and needs by a highly competent consultant, and following through with the most effective kind of community organization, the goals were finally reached some seven years later. Nowhere was small thinking evident. Everything was planned on a grand scale, though not with any reckless abandon. Eventually, due to rising costs of construction, the original plans had to be contracted to a somewhat

smaller scale, but the end result was a magnificent structure staffed with personnel of the highest calibre, from the director on down.

Perhaps the most unique feature of the Hunterdon Medical Center is the integration of services by the full time specialist staff, and the visiting staff of general practitioners. Even the most optimistic approached this arrangement with trepidation. In effect, it means that the general practitioner who refers the patient to the hospital is in charge of his patient. The full time specialist and resident staff are available to offer any assistance required, but remain as unobtrusively in the background as possible. This situation is loaded with potential difficulties, and occasional difficulties there were to be sure, but they were by and large of a minor nature. It is to the credit of the courageous planners, the community doctors and the full time staff that the system worked, and stands as a model for medical care programs in other rural communities. A good measure of the success of the enterprise is due to New York University-Bellevue Medical Center, which, under its Regional Hospital Plan, gave considerable aid to the planners and administrators of this unique pioneering program.

LOUIS D. ZEIDBERG, M.D.

ANNOUNCEMENTS

A Doctor's Prayer

A number of requests have been received asking that the Doctor's Prayer rendered by Dr. John Burkhart of Knoxville at the opening session of the House of Delegates last April, be printed in the JOURNAL. Following is the prayer as given by Dr. Burkhart.

Supreme Physician of us all
 We raise our prayer to Thee.
 Make us Thy servant, Lord, and may
 Our task be to set free
 Thy children from the dread of pain
 And hopeless agony.
 Walk hand in hand with us, dear Lord,
 As to each house we go,
 And may we through Thy grace impart
 Some of Thy mercy's glow,
 Which brings the sun of inspired hope
 To melt away doubt's snow.
 If death must walk with us today
 To nullify our skill,
 Oh Lord at least allow us to
 Adapt his stubborn will,
 To help alleviate fear
 And peace and calm instill.
 If by Thy blessing we may aid
 A new life's entrance here
 To compensate for those recalled
 And scatter heaven's cheer,
 Then may we have Thee at our side
 And feel Thy presence near.

Look kindly, Lord, on us below
 And guide our trembling hands.
 Give us an inkling of the love
 Of Him who understands
 That man cannot always be strong
 When ebbs life's shifting sands.
 For we are weak without Thine aid,
 And always weaker when
 The mysteries of life proclaim
 The gift of God to men.
 Inspire us with the blessings of
 Success and faith. Amen.

Licensing Board for the Healing Arts

The following applicants have been licensed to practice medicine in the State of Tennessee by the Licensing Board for the Healing Arts.
 Hampton, Ray—Greenville, S. C.
 Wener, Louis—Detroit, Michigan

Nash, John P.—Memphis, Tennessee
 Scott, Benjamin F., III—Ann Arbor, Michigan
 Whitten, Charles A., Jr.—Allison Park, Pa.
 Gilluly, John J.—Memphis, Tennessee
 Leming, Bert H., Jr.—Memphis, Tennessee
 Lodge, Elizabeth M.—South Pittsburg, Tennessee
 Merryman, Charles H.—Memphis, Tennessee
 Mitchum, Albert J.—Erin, Tennessee
 Peeler, Harry L.—Memphis, Tennessee
 Perrin, Millard F.—Chattanooga, Tennessee
 Classen, Jeannine A.—Nashville, Tennessee
 Robinson, Judkin M.—Nashville, Tennessee
 Royal, Andrew B.—Fort Dix, New Jersey
 Outlan, John E.—Jackson, Tennessee
 Howard, Jessie E.—Memphis, Tennessee
 Marlowe, Julius F., Jr.—Memphis, Tennessee
 Myers, James R.—Memphis, Tennessee
 Sams, Josiah B.—Flag Pond, Tennessee
 Leonard, William C.—Memphis, Tennessee
 Vaughn, Donald E.—Gastonia, N. C.

Left Internal Mammary Arteriocardiopexy in the Therapy of Coronary Artery Insufficiency. A Preliminary Experimental Report. Litvak, Jack and Arthur M. Vineberg, May 1957.

This report comes from the Research Laboratories of the Department of Surgery of McGill University in Montreal.

Experimental work has been carried on in these laboratories for several years on various surgical approaches to coronary artery insufficiency; in particular, the use of the internal mammary artery in various ways as a source of collateral circulation.

A most important characteristic of the internal mammary artery was demonstrated in the early work in which it was noted that the detached internal mammary artery, upon readherence to surrounding structures, had a marked tendency to arborize and send out new arterial branches. In those experiments all vessels implanted into a myocardial tunnel became occluded. It was later discovered that if the vessel was planted to the myocardium with a freely bleeding intercostal branch, many remained open and functioned satisfactorily as collateral circulation for experimen-

tally occluded coronary arteries. The present experiments were designed in an attempt to increase the percentage of successful results.

The procedure used consists essentially of the freeing of a loop of the internal mammary artery, the clearing of epicardium from the surface of the myocardium in a line corresponding with the freed loop of the internal mammary artery and the loose attachment of the loop to this denuded area.

In order to produce gradually increasing myocardial ischemia, the origins of the anterior descending and circumflex branches of the left coronary artery are wrapped with reactive materials at the time of arteriocardiopexy.

The report is offered as one preliminary to further more extensive studies and the follow-up is of short duration. The results are, however, quite encouraging in that all of the internal mammary arterial loops studied have remained patent and early branching from the loop into the myocardium with apparent anastomoses with coronary vessels have been demonstrated. (Abstracted for the Middle Tennessee Heart Association by William R. Cate, Jr., M.D., Nashville.)

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Surgery has much to offer in the often fatal complication of hepatic cirrhosis.

THE SURGICAL TREATMENT OF BLEEDING ESOPHAGEAL VARICES

The Abdominal Approach in Performing Portacaval Shunts

TURLEY FARRAR, M.D., Memphis, Tenn.

It is now well established and generally accepted that esophageal varices develop as the result of increased portal venous pressure due to obstruction of the portal outflow. This obstruction may be intrahepatic or extrahepatic. According to Welch,¹ 85 to 90 per cent of patients with bleeding esophageal varices will have liver disease producing intrahepatic obstruction of the portal flow. In the remainder there is some type of extrahepatic obstruction of the portal venous outflow. One of the basic defense mechanisms of the body against obstruction or partial obstruction of a vessel is the spontaneous development of collateral pathways. Naturally occurring shunts between the portal and systemic venous systems have been described and demonstrated by the early anatomists,^{2, 3} and since the esophageal veins comprise a considerable portion of this natural venous shunt between the portal and caval systems, the development of large, dilated, esophageal veins is not surprising. The important clinical manifestation of this phenomenon is the occurrence of bleeding from these esophageal varices.

Banti,⁴ observing the enlarged spleen and assuming the disease process was primarily in the spleen in such cases, recommended splenectomy. Eck,⁵ in 1877, with the idea of improvising an operative procedure for the treatment of ascites due to cirrhosis, was the first to perform a portacaval shunt in the experimental animal by anastomosing the portal vein to the inferior vena cava. One of his dogs lived several months with such a shunt. Although Rosenstein,⁶ in 1913, reported 3 patients who survived

portacaval shunting procedures, it was not practical because of the technical difficulties and the high mortality rate at that time. The first widely used clinical surgical procedure in the treatment of this condition was that of establishing shunts between the portal and systemic venous systems by creating adhesions of the omentum to the anterior abdominal wall.⁷ Although this procedure was reported to be helpful in a limited number of cases, it was not universally accepted as a successful operation. Throughout the years many surgical procedures based on various physiologic principles have been used for the treatment of this condition (Table 1). Many of these operations are physiologically unsound and very few have proved to be of any practical value.

Table 1

OPERATIVE PROCEDURES WHICH HAVE BEEN RECOMMENDED AND USED IN THE SURGICAL TREATMENT OF ESOPHAGEAL VARICES

1. Reduction of arterial flow to portal system
 - A. Ligation of splenic artery with or without splenectomy
 - B. Ligation of left gastric and splenic arteries
 - C. Ligation of hepatic artery
2. Venous exclusion of lower esophagus and fundus of stomach
 - A. Ligation of coronary vein
 - B. Ligation of splenic brevia and all other veins in region of lower esophagus and fundus of stomach
3. Shunting portal venous flow
 - A. Adhesions
 - a. Omentopexy
 - b. Para-esophageal adhesion
 - c. Implantation of spleen in abdominal wall
 - B. Splenorenal shunt
 - C. Portacaval shunt
 - D. Anastomosis of coronary vein or smaller mesenteric veins to inferior caval system
4. Obliteration of esophageal varices
 - A. Endoscopic injection sclerosing agent
 - B. Transesophageal resection of varices

5. Resection
 - A. Resection of lower esophagus
 - B. Resection lower esophagus and portion of stomach
 - C. Subtotal gastric resection and vagotomy (reduce gastric acidity)

Following the extensive work and reports of Whipple,⁸ and Blakemore,⁹ there has been a renewed interest in the treatment of portal hypertension with bleeding esophageal varices, and with the technical advances in vascular surgery, portacaval shunting operations have been reintroduced and have proved to be of definite clinical value.

Development of Natural Venous Shunts in Portal Hypertension

Naturally occurring venous shunts between the portal and systemic system in man may dilate sufficiently to keep the portal system decompressed and prevent bleeding from the esophageal varices. It has been shown that this same type of shunting will take place when the portal vein is partially obstructed in the experimental animal.¹⁰ It has been further shown that there is considerable capacity for blood flow through the dilated esophageal varices following chronic ligation of the portal veins in the dog.¹¹ Learmonth,¹² in 1949, reported a case in which death occurred four days after a splenorenal shunt had been done for recurrent episodes of bleeding from esophageal varices. In that case a large naturally occurring shunt between the splenic vein and the left renal vein was found at autopsy. This vein was 6 mm. in diameter, and yet it had not prevented bleeding from esophageal varices. Beswick and Butler,¹³ and Simmonds¹⁴ have reported similar cases in which large natural portacaval shunts have been found.

Palmer¹⁵ found no absolute correlation between portal venous pressures and the severity of esophageal varices among different patients on whom he recorded readings of portal venous pressure. It would appear that vacillation of portal venous pressure might be of greater significance than the actual level of portal pressure in initiating bleeding from esophageal varices in cases of cirrhosis of the liver. Bleeding episodes, no doubt, are precipitated in certain cases by peptic esophagitis with erosion of esophageal mucosa. Factors causing a rise in por-

tal hydrostatic pressure, such as, coughing, strenuous physical activities, retching and vomiting, and trauma to the abdomen have been accepted as initiating bleeding from esophageal varices. Dietary indiscretion and passage of nasogastric tubes may produce an episode of bleeding. Possible physiopathologic changes in the liver with variations in the degree of obstruction of portal outflow should be considered in the etiology of bleeding from esophageal varices. Thus, ideally, since it excludes the intrahepatic portal bed and makes possible a large anastomosis between the portal and systemic venous systems, the true Eck fistula should be the procedure of choice. Conversely, the shunting of portal venous blood around an already diseased liver may produce serious biochemical disturbances.

Fishback,¹⁶ doing experimental work on Eck fistula dogs, reported contradictory and confusing results, and many of his animals died from no particular cause. Rous and Larimore¹⁷ found marked atrophy of the lobe of the liver in the rabbit when the portal vein to that lobe was ligated. George Whipple and associates¹⁸ did Eck fistulas on dogs, keeping some of them alive for several years for physiologic study. They found marked defects in protein metabolism and hematopoiesis in many animals. Elevated blood ammonia levels have been noted in both the experimental animal and in the human with Eck fistula following the intake of heavy protein meals.^{19, 20}

With these factors in mind, there is strong evidence that the splenorenal shunt is the procedure of choice when the splenic vein is large and patent. In certain cases it may be necessary to use some other adjunctive surgical procedures as listed in table 1. During the past year we have used 3 such surgical procedures in treating bleeding esophageal varices, including transesophageal ligation of the veins, partial gastric resection with vagotomy, and total gastric resection in one case.

Abdominal Incision for Portacaval Shunt Procedures

Routinely we have used the thoracoabdominal approach, making the incision through the eighth thoracic interspace on

the right side for portacaval shunts, and on the left side for splenorenal shunts. By chance we first used an abdominal incision in doing a portacaval shunt in December, 1955. This first patient was a 60 year old white man who was treated a year previously for massive upper gastrointestinal bleeding from esophageal varices. At that time the pertinent physical findings were an enlarged spleen, bleeding hemorrhoids, and large varices of the lower esophagus identified by esophagram. Laboratory studies revealed he had a severely damaged liver. The tentative diagnosis was portal hypertension secondary to cirrhosis of the liver. He was advised to have portacaval shunt, but declined surgical intervention at this time.

One year later he returned with recurrence of the upper gastrointestinal bleeding and was admitted to our hospital in severe shock and almost exsanguinated. The Blakemore-Sengstaken tube was used to control the bleeding. After several days of multiple transfusions and other measures in preparation for operation and despite intermittent use of the balloon tamponade he continued to bleed; therefore surgical intervention was decided upon. The decision as to what type of definitive procedure he should have could not be made before operation; consequently, an upper abdominal incision was made to explore the portal bed. After exploring the portal system, the spleen, the splenic vein, and the portal vein, and finding a dilated, unobstructed portal vein, it was decided that a portacaval shunt would be the procedure of choice. Thus, an oblique limb to the original upper abdominal incision was extended downward and laterally toward the right superior iliac crest, giving good exposure to the portal vein and allowing us to accomplish the anastomosis of the end of the portal vein to the side of the vena cava without difficulty. This incision (Fig. 1) is a modified Kehr incision; after making the vertical component it may be extended to the left side in those cases requiring splenectomy and splenorenal shunt. We have used this incision on 2 children on whom we did splenectomies and splenorenal shunts dur-

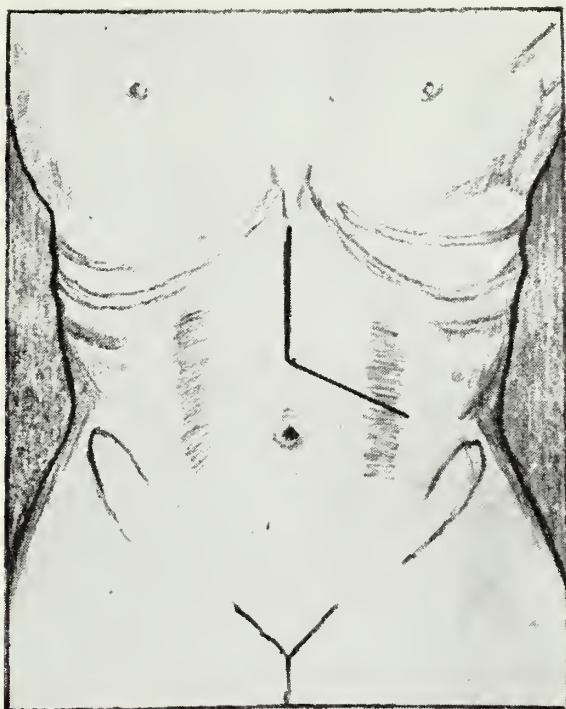


FIG. 1. Abdominal incision used for splenectomy and splenorenal shunt.

ing the past year and found it very satisfactory.

Summary

For patients with bleeding esophageal varices and splenomegaly with portal hypertension, in the presence of cirrhosis of the liver, we recommend a splenectomy and splenorenal shunt as the procedure of choice. For the emergency treatment of bleeding esophageal varices we have used the Blakemore-Sengstaken tube satisfactorily, leaving it in place as long as four days at one time if necessary. We have not used the transesophageal ligation of varices as an emergency operation. An abdominal approach may be used in certain cases to the patient's advantage. There are still many poorly understood facets of this syndrome and, admittedly, no one procedure has proved to be entirely satisfactory. Decompression of the portal system by venous shunting from the portal to the systemic system has proved its value, and all patients, unless there are strong contraindications, should have the benefit of some type of shunting procedure.

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Spine Fusion in Young Children: A Long-Term End-Result Study with Particular Reference to Growth Effects. By: Halford Hallock, M.D., Kenneth C. Francis, M.D. and James B. Jones, M.D. The Journal of Bone and Joint Surgery, 39-A: 481, June 1957.

A detailed study was made in fifteen patients who had undergone spinal fusions in early childhood and who had subsequently been followed into adult life. The fusion areas involved the thoracic spine in seven, the thoracolumbar spine in five, and the lumbar spine in three patients. All the fusions were performed for clinical diagnosis of tuberculosis, and the length of the fusion ranged from twelve vertebrae in one patient, nine in three, eight in three, seven in four, six in three and five in one patient. The fusions were of the Hibbs type and included two roentgenographically normal vertebrae above and two ver-

tebrae below the involved spine. The patients ranged in age from two to seven years at the time of fusion. Considerable variations of growth occurred but, on an average, the entire fusion area grew anteriorly 37% less and posteriorly 45% less than normal vertebrae. The fused normal vertebrae grew 23% less anteriorly and 36% less posteriorly than adjacent normal unfused vertebrae. Growth changes noted were narrowing of the intervertebral disc spaces in the fusion area and a trapeziform development of the end vertebra and underdevelopment of the fused vertebral bodies.

It appears, therefore, that the need for spinal fusion in very young children should not be delayed because of the expected shortening of the spine since this shortening will not be made more by the fusion than is ordinarily seen from the destructive process of the disease itself. (Abstracted by Thomas F. Parrish, M.D.)

The anemia and other clinical manifestations of pernicious anemia are all too often aborted or masked by the ill-advised use of "shot-gun" hematinic preparations in the undiagnosed case. Thereby the doctor may doom the patient to the invalidism of the neurologic complication of the disease.

SOME CLINICAL ASPECTS OF PERNICIOUS ANEMIA

Report of Four Cases

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Patients having pernicious anemia do not always present themselves with the classical triad of anemia, glossitis and neurologic manifestations. Frequently the clinical picture has been modified by "tonics" and oral hematinic preparations which contain varying amounts of folic acid, vitamin B₁₂, and intrinsic factor. Recently the development of diagnostic technics, using determinations of serum vitamin B₁₂ and absorption studies with radioactive cobalt labeled vitamin B₁₂, are very helpful when the diagnosis is not readily apparent. The following case reports demonstrate certain points about the clinical features, diagnosis and treatment of pernicious anemia, particularly the depression of platelets and hemorrhagic manifestations which have long been recognized but not generally appreciated.

Case Presentations

Case 1. S. M., (No. B-52970) a 68 year old white woman was admitted to the Nashville General Hospital on March 27, 1956, complaining of weakness.

She was well until 5 months prior to admission when generalized weakness, anorexia, nausea and vomiting developed. On occasions the vomitus had a coffee ground appearance and the stools were black. On the day before admission she noted aching or sometimes cramping epigastric pain, and passed several large black stools. She became short of breath. Past history was non-contributory.

Examination revealed an elderly red-haired white woman, lying flat in bed without distress. She was very drowsy but was oriented. The skin and mucous membranes were pale. The fundi showed numerous small discrete hemorrhages and exudates. The optic discs were poorly outlined, but there was no frank papilledema. The heart was not enlarged, the rhythm was regular, and the rate 104 per minute. A soft, apical sys-

toolic murmur (Grade II) was present; the blood pressure was 120/70 mm. Hg. Crepitant rales were heard at the right lung base. There was mild epigastric tenderness. The liver and spleen were not palpable. There was normal reflexia. Position sense was intact, but vibratory sensation was diminished in the lower extremities. Pelvic and rectal findings were not remarkable.

Admission laboratory findings: RBC count was 1.6 million per cu. mm., Hgb. 3.59 Gm., PCV 13%, MCV 81 cubic microns, MCH 22.4 micrograms, MCHC 27 per cent. WBC was 6,400 with a normal differential picture. The urinalysis, nonprotein nitrogen and fasting blood sugar were normal. The blood Kahn was negative. Chest X-ray film showed a small area of increased density in the right lung base.

Course and treatment: The tentative admission diagnosis was peptic ulcer with hemorrhage. A strict ulcer regimen consisting of an anticholinergic drug and antacids was begun and 1,500 ml. of whole blood were given in the first six hours. Nausea and vomiting continued without response to Thorazine or Dramamine. X-ray studies of the upper gastrointestinal tract and barium enema were normal. After glossitis was noted on about the 10th hospital day, gastric analysis was done and an histamine achlorhydria was demonstrated. Bone marrow examination revealed many megaloblasts. The platelet count was 29,000 per cu. mm. Vitamin B₁₂ was given parenterally (100 mcg. daily) with rapid clinical improvement. On the 6th day of treatment the reticulocyte count was 14%; the reticulocytosis persisted for the next 10 days. During this period the hemoglobin, blood count and packed cell volume showed an upward trend with a rise in platelet count to 122,000 on the 8th day. A vitamin B₁₂-Co⁶⁰ uptake study using the Schilling test⁹ showed a 24 hour urinary excretion of 2.4% of the test dose. She was discharged on the 29th hospital day to receive 150 mcg. of vitamin B₁₂ intramuscularly every 6 weeks on an outpatient basis. On July 20, 1956 the hemoglobin was 13.8 Gm., RBC 4.66 million per cu. mm., and the hematocrit 40 per cent.

Case 2. C. L., (No. B-52899) a 68 year old widowed white housewife was admitted to the Nashville General Hospital on March 22, 1956.

The history was inadequate, being obtained from relatives who did not live with the patient. Her present illness began 2 weeks prior to ad-

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mission when she developed a cold, associated with marked general weakness. On the day before entry intermittent epistaxis of moderate degree occurred. There had been no melena. The past history was noncontributory.

Examination: The patient was an elderly, gray-haired, irrational white woman who appeared pale, restless and dyspneic. Her blood pressure was 110/60 mm. Hg. and temperature was 101.6°. Petechiae and ecchymoses were present over the upper and lower extremities. There was no lymphadenopathy and the fundi showed only arteriosclerosis. The tongue was neither atrophic or inflamed. The lungs were clear. The heart was not enlarged; the rhythm was regular at a rate of 130 per minute. A blowing grade II systolic murmur was heard in all areas. There was moderate edema of the ankles. Abdominal and pelvic examinations were negative. Deep tendon reflexes were normal. Vibratory sensation could not be evaluated, but position sense was intact.

Laboratory studies: RBC count was 0.87 million per cu. mm., Hgb. 2.66 Gm., PCV 11%, MCV 125 cubic microns, MCHC 24.2%, and MCH 30.6 micromicrograms. White blood cell count was 6,000 with a normal differential picture. The platelet count was 18,000 per cu. mm. The urinalysis was negative. Serum bilirubin and fasting blood sugar were normal. The blood Kahn was negative. Total serum protein was 5.1 Gm. with an albumin of 3.5 Gm. per 100 ml. The stool gave a positive guaiac reaction for blood. Blood culture was negative. Chest X-ray film showed increased bronchovascular markings, mild left ventricular enlargement and some torsion of the aortic arch.

Course and treatment: She remained in a critical condition during the first four days in the hospital. Because of thrombocytopenia with purpura, gross hematuria and multiple stools containing bright red blood, she was given cortisone, 50 mg. every six hours by mouth, and transfused with 1,500 cc. of whole blood. Control of bleeding was incomplete and the hemoglobin continued to fall.

An X-ray examination of the upper gastrointestinal tract showed a normal esophagus and stomach. A large diverticulum was present in the third portion of the duodenum. Barium enema demonstrated diverticuli in the sigmoid colon. Bone marrow study disclosed numerous megaloblasts, a scarcity of megakaryocytes, and hypermaturity of leukocytic elements. On gastric analysis no free acid was obtained after histamine.

Vitamin B₁₂ was then employed as a therapeutic test for pernicious anemia. The reticulocyte response was dramatic, reaching a peak of 41% on the 6th day of treatment. The platelet count rose to 90,000 on the 5th day, 190,000 on the 7th day, and 225,000 on the 9th day of treatment. Bleeding ceased, and the hemoglobin, packed cell volume, and red blood cell count began a steady rise. She became cooperative and

oriented but continued to have periods of confusion. She was discharged on the 39th hospital day, markedly improved with a hemoglobin of 10.4 Gm. per 100 ml.

Case 3. E. B., (No. B-52752) a 68 year old white housewife was admitted to the Nashville General Hospital on March 8, 1956.

She had been well until one year prior to admission when she developed progressive anorexia, generalized weakness, weight loss, confusion, and observed diminution of mental acuity. She was ambulatory until 3 weeks before hospitalization. Because of ataxia, she then remained in bed most of the time. Concomitantly she developed urinary incontinence and paresthesias of the hands and feet. A physician had prescribed an elixir of vitamin B complex and medication for urinary incontinence. She continued to feel worse, the symptoms increased, and soon she discontinued these medications. Ten days before admission another physician was consulted who prescribed a commercial preparation containing ferrous sulfate, liver extract and folic acid.

Examination revealed an elderly, gray-haired, blue-eyed woman who appeared chronically ill, pale and weak. Her sensorium was cloudy. There was no lymphadenopathy. The mucous membranes were pale. The retinal vessels were pale and there were discrete exudates and hemorrhages in the fundi. The tongue was dry but there was no atrophy of the papillae. The chest was asymmetrical with marked kyphosis, increased anteroposterior diameter, and decreased breath sounds; the respiratory rate was 24 per minute. The blood pressure was 135/80 mm. Hg. The heart was moderately enlarged and presented a soft systolic apical murmur. The rate was 80; there was a basically regular rhythm with frequent premature systoles. The liver and spleen were not palpable. Muscle wasting of the extremities was evident without loss of motor control. An irregular, superficial ulceration was present anteriorly on the lower right leg. The dorsalis pedis arteries were palpable bilaterally and there were no notable varicosities. Neurologic examination revealed hypoaffective ankle jerks. Vibratory sense was questionably impaired, but position sense was intact.

Admission laboratory findings: RBC count was 1.7 million per cu. mm., Hgb. 5.51 Gm., PCV 23%, MCV 110 cubic microns, MCHC 29 micromicrograms, MCHC 25%, sedimentation rate 41 corrected to 8 mm. per hour, reticulocyte count 2.9 per cent. The platelet count was 77,000 per cu. mm. The WBC was 11,600 with a normal differential picture. The serum bilirubin was normal. The NPN was 44 mg. per 100 ml.

Course and treatment: During the first week in the hospital the patient's mental confusion cleared partially and she felt better. The hemoglobin rose from 5.5 to 8.8 Gm. by the 8th day without any specific form of therapy. The platelet count increased from 77,000 on admission to 265,000 by the 8th day, and reticulocyte counts varied from

2.9 to 2.2% on the 8th day. The gastric contents contained no free hydrochloric acid after histamine. Barium studies were reported as normal for the esophagus, stomach and duodenum. There were diverticuli of the sigmoid colon. Stools were negative for blood on two occasions. Tests for cold and warm agglutins and acid hemolysins were negative.

Case 4. G. C., (No. B-11374) a 56 year old housewife, was admitted to the Nashville General Hospital on May 19, 1956, complaining of vomiting and diarrhea.

She had been in her usual health up until 4 months previously, when she became weak, and food was tasteless. Three weeks prior to admission she developed sore throat, anorexia, generalized weakness, unsteadiness of gait and grasp, and noted tingling sensation in the hands and feet. On the day before entry to the hospital she developed nausea, vomiting and diarrhea. There was no hematemesis or melena. On this day she had fallen bruising her face.

She had been treated with arsenicals in 1930 and again in 1936 for syphilis. In 1946 and 1949 she received 2.56 million and 2.8 million units of penicillin respectively as treatment for asymptomatic central nervous system syphilis. In 1953 a subtotal thyroidectomy was done for hyperthyroidism and a hysterectomy for menorrhagia.

Examination revealed a gray-haired white woman who appeared older than her stated age. Her temperature was 101°. She was pale, oriented and cooperative; a hearing aid was employed. There were areas of bluish discoloration about both eyes and the left cheek. There was an arcuate scar around the base of the neck anteriorly and splotchy areas of depigmentation over the forearms. The left pupil was larger than the right. Both pupils responded slowly to light. Blood pressure was 140/70. The fundi showed discrete exudates peripherally. The tongue was pale with normal papillae. The lungs were clear. The heart was not enlarged and the rhythm was regular at a rate of 100 per minute. A soft systolic murmur was heard over the precordium. The spleen and liver were not palpable. Pelvic findings were not remarkable. The patella and achilles tendon reflexes were absent bilaterally. Position sense was intact, but vibratory sensation was absent in both lower extremities. Babinski's reflex was absent bilaterally.

Admission laboratory findings: RBC were 1.97 million per cu. mm., Hgb. 6.03 Gm., PCV 20%, MCV 98 cu. microns, MCH 31 micromicrograms, MCHC 31%, and reticulocyte count 0.3 per cent. The WBC count was 4,800 with a normal differential count. The platelet count was 141,000 cu. mm. A urinary urobilinogen was 5.9 Ehrlich units. Urinalysis was negative. Blood Kahn was negative. Prothrombin time was normal, and direct and indirect Coombs tests were normal. The stools did not contain blood. The spinal fluid contained 4 WBC per cu. mm., 14.6 mg. % protein, and the Wassermann test was negative.

The bone marrow was megaloblastic. Gastric analysis revealed no free acid after histamine.

Course and treatment: Vitamin B₁₂ intramuscularly was begun on the 11th day. The reticulocyte count reached a peak of 12% on the 6th day of treatment. Her appetite improved. She became more alert and active, and the paresthesias were less marked. Barium studies of the esophagus, stomach, duodenum and colon were normal. Within 3 weeks following initiation of treatment, vibratory sensation had returned to normal. The Schilling technic of the Co⁵⁷-vitamin B₁₂ absorption test resulted in 0.8% excretion of the total test dose in the 24 hours urine output* following administration.

Comments. The patients of Cases 1 and 2 presented themselves with hemorrhagic phenomena as the outstanding clinical feature. In the first patient the gross blood loss from the gastrointestinal tract was enough to suggest bleeding peptic ulcer as a likely possibility. There were neither glossitis nor neurologic findings to suggest pernicious anemia as the correct diagnosis. The thrombocytopenia, retinal hemorrhages and severe degree of anemia should have suggested the possibility of this diagnosis, but it was not until the seventh day, when she developed glossitis, that pernicious anemia was suspected and more definite diagnostic studies begun. In Case 2 there were marked anemia, epistaxis, purpura, positive tourniquet test and mental confusion as the outstanding features. Various types of purpura with chronic blood loss were first considered but were not consistent with the marked macrocytosis present. Again, the absence of glossitis and demonstrable neurologic abnormalities (exclusive of mental confusion) did not help, and the diagnosis was not apparent until the demonstration of achlorhydria and a megaloblastic marrow. Cortisone and whole blood transfusions only partially controlled the bleeding and the platelet count remained depressed until the administration of vitamin B₁₂.

Case 3 reflects the necessity for early specific diagnosis and adequate treatment in patients having neurologic involvement to prevent irreversible changes. It is likely that this patient had both anemia and neu-

*The patient's 24 hour output was 880 ml. rather than the recommended 1,000 ml. or greater. However, the very low excretion left little doubt of markedly impaired absorption so no subsequent test was done.

rologic findings three months before admission, and that a modest attempt at specific diagnosis at that time would have led to proper treatment and prevention of the residual ataxia and loss of sphincter control that is present even after intensive treatment with parenteral vitamin B₁₂. The oral hematinic preparation in this case did not significantly affect the neurologic picture. Its administration probably prevented the expected reticulocyte response to parenteral vitamin B₁₂ and altered the bone marrow. With loss of these valuable features of the disease, the diagnosis was only presumptive on the basis of anemia, neurologic involvement and histamine achlorhydria. Only by means of the vitamin B₁₂-Co⁶⁰ absorption test was the diagnosis established.

Case 4 demonstrates that glossitis may be absent, not only in the presence of well developed anemia, but even in the presence of severe gastrointestinal symptoms.

Discussion

Thrombocytopenia and Hemorrhage. Biemer¹ (1872) noted a relatively high incidence of retinal hemorrhages and small cutaneous petechiae in patients with pernicious anemia, pointing out the occasional occurrence of marked gastrointestinal or genitourinary bleeding. Biemer explained these minute hemorrhages on the basis of fatty changes in the capillary walls. Hayem² (1889) described thrombocytopenia in 3 out of 4 cases. Minot³ (1918), in a discussion of hemorrhagic diseases, mentioned pernicious anemia as a cause and gave the case history of a 44 year old male with purpura, bleeding gums, and a platelet count of 70,000 per cu. mm. In the absence of benign or malignant lesions of the gastrointestinal tract, bleeding in the patient with pernicious anemia is usually associated with thrombocytopenia. Paddock⁴ demonstrated clearly the frequency with which the depression of platelets occurs and correlated this with the degree of anemia. In 22 cases of untreated pernicious anemia reported by Paddock, only 2 had platelet counts of more than 100,000 per cu. mm. He went further to state,—"The finding of a severe anemia without a coincident thrombocytopenia is, according to the series, uncommon." Pad-

dock made another important point, that thrombocytopenia is commonly seen in other types of macrocytic anemia, particularly sprue, and therefore cannot be used as a differential point in favor of pernicious anemia in cases of macrocytic anemia.

During the past 10 years at Vanderbilt University Hospital, 26 patients have been seen with an acceptable diagnosis of pernicious anemia and in whom the hemoglobin was 10 grams or less and on whom platelet counts prior to treatment were recorded (Table 1). While platelet depres-

Table 1

CORRELATION OF PRETREATMENT PLATELET COUNTS WITH ERYTHROCYTE COUNTS AND HEMOGLOBINS IN 26 PATIENTS WITH PERNICIOUS ANEMIA (VANDERBILT UNIVERSITY HOSPITAL)

Erythrocytes (per cu. mm.)	Hemoglobin (Gm. %)	Platelets (per cu. mm.)
0.70	3.1	87,000
0.77	3.5	40,000
0.92	4.1	36,000
1.06	4.3	60,000
1.10	4.0	102,000
1.15	5.3	41,000
1.20	4.2	14,000
1.23	4.5	261,000
1.25	5.1	121,000
1.29	6.9	325,000
1.30	6.6	87,000
1.36	6	38,000
1.40	4.2	45,000
1.42	6.5	237,000
1.45	6.8	332,000
1.46	7.5	125,000
1.47	3.9	62,000
1.98	7.0	39,000
2.0	8.5	60,000
2.05	7.0	295,000
2.14	9.5	75,000
2.28	9.3	283,000
2.33	9.6	227,000
2.35	7.2	717,000
2.5	9.0	200,000
2.71	9.5	55,000

sion was the rule and was generally directly related to the degree of anemia, there was considerable variation. Of 38 additional cases in which platelet counts had not been recorded, many were reported to have had platelets "reduced" or "very few" in peripheral blood smears. Following treatment platelet production commonly "over shoots," resulting in very high platelet counts. Of the above 26 patients, the peak platelet count (per cu. mm.) following treatment was over one million in 9 cases, above 2 million in 5 cases, and was 6,700,000 in the highest. No thrombotic phenomena were encountered.

Promiscuous Use of Hematinic Preparation. A great percentage of anemias encountered in office practice are due to iron deficiency secondary to chronic blood loss. The body's economy of iron (excretion of less than 1 mg. per day) is such that a low dietary intake of iron is almost never an adequate explanation of the iron deficient state except in infants. The physician's major duty is to establish the site of blood loss, whether it be benign, as in functional menorrhagia, or as serious, as carcinoma of the colon. In any event the building block which is deficient is iron, so it is reasonable that iron be replaced. There is no logic, however, in treating such patients with hematinic preparations which contain, in addition to iron, folic acid, vitamin B₁₂, intrinsic factor, copper, vitamin C, cobalt, and/or various minerals. When iron therapy is indicated it should be employed for 2 to 6 months or longer in an attempt to replace the patient's depleted body store of iron. The relative cost of popular preparations of iron salts and "shotgun" hematinic preparations are shown in table 2.

Table 2

COMPARATIVE COST OF SIMPLE IRON SALTS AND "SHOTGUN" PREPARATIONS IN THE TREATMENT OF IRON DEFICIENCY ANEMIA

Hematinic Product	Recom- mended Fair Trade Price (Cost/100)	Iron Content Per Tablet or Capsule (Mg.)	Cost of 180 Mg. Per Day of Iron for 3 Mo.*
Feosol** (Smith, Kline, and French)	\$1.50	60	\$4.05
Feosol-Plus*** (Smith, Kline, and French)	\$4.50	40	\$18.23
Fergon** (Winthrop)	\$0.97	36	\$4.37
Fergon-Plus*** (Winthrop)	\$7.97	60	\$21.52
Ferrous Sulfate Enseals** (Lilly)	\$1.05	60	\$2.84
Trinsicon*** (Lilly)	\$7.97	60	\$21.47

*Equivalent to the usual dose of 1 Gm. (15 Gr.) FeSO₄, daily.

**Simple ferrous salt, either a sulfate or gluconate compound.

***Contains, in addition to iron salts, a variety of substances including intrinsic factor, Vitamin B₁₂, folic acid, etc.

Similarly, folic acid, liver extract and vitamin B₁₂ are specific agents, useful only in patients in whom they are deficient.⁵

The anemia in such cases is megaloblastic. Folic acid is of value only in a limited number of conditions which are rare in this country,—particularly in sprue, idiopathic steatorrhea, nutritional macrocytic anemia, "pernicious anemia of pregnancy," and megaloblastic anemia of infancy. Liver extract, or its active hematinic principle, vitamin B₁₂, is the only effective therapy for pernicious anemia, but may be deficient, and therefore indicated, in certain other macrocytic anemias such as sprue and idiopathic steatorrhea. Iron has no place in the treatment of the above megaloblastic anemias unless chronic blood loss with iron deficiency coexists.

While folic acid may effect a good hematologic response in pernicious anemia, its use in the absence of adequate vitamin B₁₂ therapy may precipitate serious neurologic disorders. Conley and Krevans⁶ have pointed out clearly the problems to be encountered by the use of oral multivitamin preparations, "shotgun" hematinics and "tonics" containing folic acid, with or without vitamin B₁₂. Of 10 new patients with pernicious anemia seen at Johns Hopkins during 1950, 5 had essentially normal blood values and complained only of neurologic symptoms. Each of these patients had received a multivitamin preparation prior to admission, in 4 cases the specific preparation being identified and containing folic acid. Conley and Krevans⁷ have since made a disturbing report of 14 new cases of pernicious anemia in which there was crippling neurologic disease in the absence of any appreciable degree of anemia. These patients were seriously disabled, being unable to stand or having urinary and/or fecal incontinence. Residual neurologic manifestations have remained after intensive parenteral vitamin B₁₂ therapy. They state, "In most cases it was definitely established that the patient had been taking a vitamin preparation containing folic acid."

The most plausible mechanism by which oral preparations containing folic acid and vitamin B₁₂ encourage neurologic disturbances in patients with pernicious anemia is as follows:—folic acid is readily absorbed from the intestinal tract in the absence of intrinsic factor whereas vitamin B₁₂ is not.

Although various preparations have been shown to have intrinsic factor activity, the potency of "intrinsic factor" found in the average hematinic containing B₁₂ is variable and cannot be relied upon. In the absence of intrinsic factor an oral dose of vitamin B₁₂ must be 60 to 100 times as large as a parenteral dose to have a comparable effect. Few, if any, oral "shotgun" preparations contain enough vitamin B₁₂ to be effective. The folic acid in such preparations, however, is well absorbed and frequently will induce a hematologic response. This may mask the true nature of the disease and allow progression of the neurologic disturbance to an advanced degree prior to correct diagnosis.

Recent Diagnostic Aids in Pernicious Anemia

The pernicious anemia patient who presents himself with neurologic manifestations in the absence of anemia or in whom liver extract, vitamin B₁₂ or folic acid have been given without adequate diagnostic studies having been made, presents a difficult diagnostic problem. Fortunately, recent developments have made available two diagnostic methods which have proved most useful in the above situations.

Absorption of Radioactive (Co⁶⁰) Vitamin B₁₂. Heinle and Welch⁸ demonstrated that when small oral doses of vitamin B₁₂ Co⁶⁰ are given to patients with pernicious anemia, radioactivity equivalent to 72 to 96 per cent of the test dose is excreted in the feces. However, if an ammonium sulfate precipitate of hog stomach (supplying intrinsic factor) is given simultaneously, excretion fell to around 25 per cent. This was a signal advance in the long history of pernicious anemia, because for the first time one had the means to make with accuracy the diagnosis of pernicious anemia during remission or following confusing therapy. Schilling applied this information later and found that by giving a larger parenteral injection of nonradioactive vitamin B₁₂ simultaneously with the oral radioactive test dose, radioactivity could easily be detected in the urine of normal patients. The following technic of Schilling has made practical the widespread use of this important diagnostic test:

Following the collection of a control urine, 1 to 2 mcg. of vitamin B₁₂-Co⁶⁰, with an activity of about 0.25 to 0.5 microcurie, is administered orally to the fasting subject in 100 cc. of water and the collection of a 24 hour urine is begun. Two hours following the test dose, a subcutaneous injection of 1,000 mcg. of nonradioactive vitamin B₁₂ is given. The radioactivity of the 24 hour urine is determined and the percentage of the test dose calculated.

Schilling did tests, using the above technic on 97 subjects. Respective urinary excretions of the oral test dose were as follows: in 18 control subjects, 7 to 22 per cent (average 14.2 per cent); in 31 patients with achlorhydria but without pernicious anemia, 2.2 to 29 per cent (average 11.6 per cent); and 35 patients with pernicious anemia 0 to 2.3 per cent (average 0.6 per cent). When a preparation of known intrinsic factor activity was given along with the test dose to patients with pernicious anemia, urinary excretion of the test dose was increased to from 3.1 to 30 per cent (average 9.8 per cent). The demonstration of the abnormally low urinary excretion of a test dose of Co⁶⁰ labeled vitamin B₁₂ followed by an increased urinary excretion on subsequent testing when intrinsic factor is given simultaneously with the test dose, is strong evidence in favor of pernicious anemia rather than other types of absorptive defects.

Serum Vitamin B₁₂ Concentration. The protozoan *Euglena gracilis* has been shown by Hunter¹⁰ to exhibit a quantitative growth response to crystalline antipernicious anemia factor in a chemically defined medium. No other substances have been found to replace vitamin B₁₂ in this role as a growth requirement for *Euglena*. Making the assumption on the basis of the above that growth promoting effects of body fluids are due to some form of vitamin B₁₂, Ross¹¹ studied serum, cerebrospinal fluid, and urine in humans. Under proper conditions an inoculum of *Euglena* is incubated with the test fluid and the concentration of *Euglena* determined by turbidimetric measurements. The technic used is sensitive to from 5 to 25 micromicrograms per ml., and can detect as little as 1 micromicrogram per ml. However, it is not practicable to detect less than about 10 mmg. per ml. because a serum concentra-

tion of greater than 1:8 dilution coagulates during heating.* Ross found normal human serum values for total concentration of vitamin B₁₂ to vary considerably, between 350 to more than 1,000 mmg. per ml. The variation was largely in the uncombined portion, combined values rarely exceeding 500 mmg. per ml. Lear and associates¹² have applied Ross's technic to study serum B₁₂ concentration in a variety of conditions. Their results, shown in table 3 demonstrate

Table 3

SERUM VITAMIN B₁₂ CONCENTRATIONS

Group	Number of Subjects	Range	Mean S. D.*
Normal	20	292- 856	532 ± 161
Pernicious anemia in relapse	33	0- 85	39 ± 26
Pernicious anemia in remission	22	123-1,330	525 ± 337
Neurologic disease	14	195- 760	439 ± 170
Achlorhydria	9	225- 800	450 ± 234
Folic acid deficiency	12	148- 557	307 ± 130
Hepatic cirrhosis	29	193-2,200	714 ± 534
Miscellaneous	40	115-1,029	

*S. D.—Standard Deviation.

(Reproduced from Lear et al, *J. Lab. & Clin. Medicine*, 44:715, 1954, by permission of the C. V. Mosby Co.)

the usefulness of this procedure in the diagnosis of pernicious anemia in relapse. This is particularly true in the 25 per cent of pernicious anemia patients who first present themselves with neurologic disturbances in the absence of anemia. Although the onset of anemia usually soon follows, it may be more than one year in some cases. In these and other cases where normal blood levels may have been maintained by small amounts of folic acid in multivitamin preparations, the importance of early diagnosis to minimize permanent neurologic damage is apparent.

Summary

1. Four cases of pernicious anemia are presented; 2 had severe thrombocytopenia with hemorrhagic manifestations; the third one exhibited predominately subacute combined degeneration of the spinal cord with

delayed diagnosis; in the fourth, signs of subacute combined degeneration were associated with severe anemia without glossitis.

2. Thrombocytopenia is the rule in pernicious anemia with appreciable anemia. It may be of such severity as to produce purpura or massive gastrointestinal hemorrhage.

3. The classical triad of glossitis, anemia and subacute combined degeneration is infrequent. The atypical case has become common. Diagnostic tests are available which indicate either deficiency of intrinsic factor or low serum level of vitamin B₁₂.

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*The technique includes heating to 100° for 15 minutes to liberate the maximum amount of vitamin B₁₂ from the heat labile complex in which it may be found in the serum. Determinations made prior to heating are taken to represent free vitamin B₁₂ and the increase in concentration after heating to represent combined vitamin B₁₂.

STAFF CONFERENCE

University of Tennessee College of Medicine*

Organic and Emotional Factors in Mental Illness.

DR. G. H. AIVAZIAN: The patient selected for this morning's seminar presents many interesting facets for discussion. The problem is a common one encountered in everyday practice by psychiatrists and general practitioners. Although the emotional origin of the symptoms is not difficult to see, yet in the differential diagnosis several conditions have to be considered and the relative importance of the organic and emotional factors determined. Finally, when we come to the general management and treatment this is a patient that presents a hopeful note because we feel that much can be done to improve her condition and the improvement maintained through outpatient care. Now Dr. Barker will first present the present illness and her observations during the period of hospitalization of this patient.

DR. ELIZABETH BARKER: This thirty-three year old, white, married female, was admitted to Gailor Hospital because of symptoms of tinnitus, difficulty in focusing her eyes, crying spells and self-doubt of four months' duration. According to the husband she was always, prior to her illness, a bashful, shy, retiring girl who had difficulty making friends, was excessively concerned with the opinion of others and who always thought of and referred to herself in a derogatory manner. Typical statements were: "I'm no good and never have been" and "I don't see how you could ever love somebody like me." In disposition he compared her to her father who has always had a dour outlook on life and has considered himself unloved and unwanted. Her father frequently says, with tears in his eyes, "Well, children I'll not be here this time next year." The mother however was always cheerful, outgoing and liked by everyone. The patient has felt socially and intellectually inferior to others and her husband feels that she actually is slow in learning and understanding many things.

In January, 1957, she became quite upset over an incident in the PTA. The husband is active in Catholic school and church work and coaches the basketball and baseball team. He is organizing a girl's team and at one of the mother's meetings

he had requested that his wife announce that girls of the sixth, seventh, and eighth grades would be acceptable on the team but not of the fifth grade. Some of the fifth grade mothers made unpleasant remarks about this which the patient interpreted as being directed personally towards her. She became preoccupied with this, and could not be convinced that she had not done the wrong thing. This became progressively worse, and she also began to worry about committing a great sin which she would not discuss but which would cause harm to her family.

She worried about whether she had been left on the doorstep as an infant and had not been wanted by her parents. She felt people were talking about her and she would not accept the friendship of her neighbors. She talked about these ideas constantly, would wake in the middle of the night and arouse her husband to discuss them with him. She had some difficulty concentrating, and in pursuing a single line of thought, but did not give evidence of hallucinations. She stopped eating regularly, lost weight, had difficulty sleeping, let her housework go while she talked with her husband and her family about her worries. She could not bear to be left alone and cried a great deal of the time. She consulted both her obstetrician and her family physician for headaches, which she said were due to excessive thinking, cloudy vision, low back pain and ear ache. She had an up and down course, being very moody and overwhelmed by her thoughts one day, then being fairly normal for three or four days. Gradually the situation became unbearable and she was sent to a private psychiatrist and subsequently admitted to a private psychiatric hospital here in Memphis where she had four electro-shock treatments.

Two of her siblings drank and two have had short-term psychiatric treatment. The husband considers only the older brother out of the six children to be completely stable. The rest of the children look to him more than to the father for guidance. The patient and her husband were married after a courtship of 2½ years, 1½ of which he was overseas. He was twenty-six and she was twenty-one at the time.

He had no misgivings but she was worried because he was Catholic and she was Protestant, though she had never been active in her church work. There has been little conflict over religion in their marriage as far as he is concerned. He has never objected to the use of contraceptives and at one time, after the birth of their second child, she did use a diaphragm for some period. After the fourth child was born in 1955 her physician recommended a tubal ligation to prevent further pregnancies. He did strongly object to this and this was the only time there was ever actual conflict. During her pregnancies both have been happy, both wanted a number of children but no set number. He was quite attentive to her and considered her prettier during her pregnancies than any other time. She has always

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been a splendid housekeeper and mother, being immaculate in her own dress and in keeping the children's clothes and house. He does not consider that she was preoccupied with cleanliness, however, and although she tries to live by schedule she is not rigid about it. His only objection to their marriage is that she is not affectionate towards him or towards the children. In July, 1956 she had a hysterectomy following Caesarian section. The husband accepted this as a medical necessity and quieted his wife's fears about it. She showed no particular change except to demonstrate more affection than she had in the past.

At the time of admission here she appeared to be well developed, slender, slightly grey, thirty-three year old, woman who was always neatly dressed, who was quiet but friendly with everyone and has always been one of the most cooperative patients on the ward. During the interview she sits quietly, spends most of her time looking at her hands or fiddling with her clothes. She talks in a low, barely audible voice with little inflection. Reaction time is quite slow. She pauses for long periods of time and then breaks off answers in the middle of a sentence. Many questions are side-stepped or given a casual "Well I just don't know." Very little is contributed voluntarily. She is interested only in quieting her fears. When it comes to giving information she is apathetic. Her use of the language is ordinary. She is generally tense, unhappy and worried but not agitated or profoundly depressed. At times she is pleasant but ever fearful. Evidence of concern is most clearly seen when she discusses her fears over her physical condition and her distress over the wrong she has done her family. Other topics evoke little reaction of any kind. Her thoughts center almost exclusively around herself. Her major interest is whether or not she has some dread disease.

For the first week of hospitalization she would request a daily interview, then each time, as if it were the first, would ask: "Dr. Barker, what do you suppose is really wrong with me?" When she was assured that there was no evidence of organic disease she would be partially relieved but unconvinced. With each meeting she would also say: "Isn't it terrible what I am doing to my family? I feel so bad and wicked. I shouldn't be here. I should be at home taking care of them." These thoughts bother her most when she would awaken in the middle of the night and be unable to go back to sleep. Her conversation is sprinkled with such expressions as: "I guess I am just too stupid to understand," or "Is that really so bad?" or "Isn't that just awful?" She complains of being ridden with thoughts she wishes to escape. They overpower and engulf her. Most of her worries concern her own inadequacies socially, intellectually, and as a wife and mother.

She is also convinced that she has some horrible disease which the doctors have been unable to find. This could be either cancer of her reproductive organs or brain damage, caused by re-

moval of her uterus. The fact that she is not a Catholic but has tried to become one is upsetting to her. She has tried to understand the doctrine but is just "too dumb." Financial worries are another source of strain. It is hard to manage their five children, their housing facilities are inadequate and when they tried to move to larger quarters they couldn't meet the payments and had to move back to poorer ones. Before coming to the hospital she brooded a great deal on past events, particularly on the feeling of being unwanted as a child but now she has heartily said she knows that this isn't so. She remembers that at church she and her siblings were made fun of because of their dress and she attributes some of her religious difficulties at this time to this. She denies hallucinations or compulsive acts. She feels that people talk about her, criticize her for doing the wrong thing, and not working hard enough, but does not think that anyone wants to hurt her. Quite to the contrary she feels that she is unworthy of the nice things people do for her. She does have certain somatic complaints, dizziness, a gray cloud over everything she looks at, headaches, and noise, a sort of buzzing behind her left ear. Sometimes it feels as if a train is running around the back of her head from her left ear to her right. She is well oriented and appears to be of low normal intelligence. Her insight is limited. She recognizes that she is ill and needs treatments but cannot accept the fact that organic disease is not behind it all. She considers her chief source of stress first, overwork with too many school and church activities and worry over joining the Catholic church.

A complete neurological work-up was done and no evidence of central nervous system damage was found. The only finding was a dilated pupil of unknown etiology on the left. Visual fields and fundoscopic examinations were normal. Skull films were negative. A Bender psychological test for organic disease revealed no evidence of that. There were some EEG changes in the temporal area bilaterally but these were considered compatible with temporary changes which occur following EST. There has been no history of trauma, epilepsy or nervous system disease in the past.

During hospitalization she has been given seven ECT and has been maintained on 100 mgm. Sparine four times a day. Subjectively she feels happier, more content, feels less burden of thought, and is less self-conscious with the other patients. Her cloudy vision, dizziness, and buzzing noises have disappeared. She is less tense and has a more cheerful manner, yet still is quite slow and lethargic to respond. In the past few days, for the first time some aggressive behavior has been noted by the nurses on the ward.

This is a well-developed, well nourished, white, female, of apparently low normal intelligence, who has no evidence of physical disease, always shy, and lacking in self-confidence with the combined pressure of financial worries, religious conflicts, surgery, and the work involved in caring

for five children. She became depressed, burdened with inescapable thoughts of a self-derogatory nature and overwhelmed with fear of organic disease. Though she has certainly distorted reality in her thinking she has made no actual break with it. Her behavior has been affected but not profoundly so. There has been diminished interest in outside activities but no real withdrawal from society. She is preoccupied with her own problems. There has been dulling, but no inappropriateness of her affect. Her mood has consistently been one of mild depression. There is definite slowing of reaction time. My own opinion is that the changes are marked enough to be considered psychotic, either depressive reaction or schizophrenic reaction. In either one the depression, sense of guilt, retardation of thought and misinterpretation of reality could be found but because the disturbance actually seems to be more of thought than of mood and because there has been no real change in environmental stress to bring about her depression my impression at this time is that of schizophrenia, probably acute, undifferentiated type.

DR. AIVAZIAN: Dr. Barker, you stated that there has been no change in the environmental stress. How much importance do you attach to the hysterectomy which preceded the present illness?

DR. BARKER: I think it certainly was important but it preceded the present illness by at least six months and so was not a sudden thing.

DR. ORHAN OZTURK: It was noted by the nurses that after ECT the patient became aggressive and I'm not clear in what way she became aggressive. Could you clarify that?

DR. BARKER: I'll read you the nurses' note dated two days ago. "The patient's behavior is changing. She is mischievous in the dining room, tries to get other patients to disobey rules. She has been sweet and cooperative but now is hostile at times. She dances in the hall, while she used to be inconspicuous. She tells other patients to help themselves instead of helping them without murmuring as she used to do."

DR. HARVEY C. REESE, JR. You mentioned that she had had to move from a house that she wanted to live in back to more unfavorable circumstances. Could you tell us when that was in relation to her illness

DR. BARKER: That was three years ago.

DR. AIVAZIAN: Mr. Cooper will now

give a summary of the social history. Mr. Cooper.

MR. JAMES COOPER: The following information was obtained from Mr. John R., patient's husband, age thirty-eight. He was composed, expressed himself well, and seemed very much in command of the situation. He had a good sense of humor, and seemed to be meeting this difficulty without being overwhelmed by it. He has a stable work record, having been a letter carrier for the United States Post Office some 16½ years.

Regarding the patient's present illness, reference has been made to the fact that in July, 1956 she gave birth to a child by Caesarean section and because of complications later had a hysterectomy. She was in good emotional health following this operation until January, 1957, when she began to become weak, without energy, tense, and sensitive. In addition she became obsessed with the idea that she had failed in the responsibility described by Dr. Barker, and was confined to her bed for a week because she seemed not able to do anything but worry about this imagined failure. She was taken to Dr. B. who gave her some medication and recommended that if improvement were not forthcoming she be hospitalized. She began to cry about her difficulty and to lose more weight but seemed quite normal mentally except for preoccupation with this unrealistic idea. This thinking spread after several weeks so that it included the idea that she had disgraced her husband and family, particularly the two children who were in school. The patient, in February, 1957, went to Dr. R. her obstetrician, for a six months check-up, and because of the considerable weight loss. Because of her sensitivity, her crying, etc. without medical cause Dr. R. referred patient to a psychiatrist who recommended hospitalization although he didn't think it was an emergency. He prescribed medication and for three weeks things continued to be about the same. Dr. P. in March again recommended hospitalization. However, things then seemed to become markedly improved for she felt more energetic, gained considerable weight, and wasn't confined to her bed as much. She was stronger

and most important she was not so obsessed with her "failure," although she still stated that she realized that she had not really done anything wrong, but she couldn't help feeling that she had. In the latter part of April she became worse. The above-mentioned factors became greatly exaggerated. She began to confide in a great number of people about these thoughts and began to call up various people. She began to feel that her brothers and sisters had been good to her and she hadn't deserved this goodness and she had failed as an individual in her behavior toward them. She was then taken to a private psychiatric hospital on April 29, remaining there for five days, receiving four EST and then was discharged, the plan being that she would be transferred to Gailor. She entered Gailor three days later.

The informant can remember only one time in the patient's past when her behavior was similar to the way that it is now. This was in 1953, when her mother, aged 59, was about to have an operation for a respiratory difficulty. The mother died after this operation, but on the day of the operation patient had been apprehensive and she "passed out" which, according to the informant, seemed to be because she had just worried about this so much. She was taken, because of this, to Baptist Hospital where she remained for five days and her condition at that time was very similar to the way she is now physically except that she was not preoccupied with self-doubts. According to the informant the difficulty at that time was diagnosed hypertension. Further, during the last three pregnancies the patient has had "hypertension and high blood pressure" and because of this she had to be taken to a hospital for some two weeks before one of her last deliveries.

Regarding her family history, she had two brothers and three sisters. There is only one sibling who remains in Memphis. The patient and this twenty two year old brother visit one another's homes about once a week and seem to get along well although there are frequent arguments about handling the children and the respective households. Informant, in describing these arguments said "They are just like two

kids." The father is a mailer on a newspaper; is in his 70's and not in good health. During all of patient's early years at home she was very concerned about her father who drank continually. This was always a source of embarrassment for her. She didn't feel comfortable in inviting people to visit her home because she didn't know whether her father would be drunk. The patient finished high school but we don't know much about her school adjustment. She was interested in economics and gym. Her employment history consisted of part-time work in a drug store while in high school and in 1943 she was a riveter for the war industries. Since before the birth of the first child, she has not worked. She has been in fairly good health through the years except for the "hypertension and high blood pressure."

The patient and informant were married in 1945, being the first marriage for both. There have been five children born in 1946, '47, '51, '55, and '56. The last two were Caesarean sections. There have been no stillbirths. All the children are healthy. There was a hysterectomy after the last child was born. The informant feels that this generally has been a satisfactory marriage. However, he is not satisfied with sexual areas of their life. The patient is not particularly desirous of intercourse and submits rather passively, except for about once a month, when she seems interested in it. This is his only complaint about their marriage. She has always been "full of nervous energy." "She eats like a horse, works like a mule and can't gain any weight, just burns it off." She is always in a hurry to get things done. He remembers that she used to lose her temper at him over minor differences. For example, when she and he had decided that he was going to cut the yard and something came up which interrupted cutting the yard she became upset. Any deviation from a plan which she had made seemed to go against the grain and make her feel ill at ease, made her in fact, lose her temper and give her husband a tongue-lashing. However, she has not done this for about two years or about the time of the first of her two Caesarean sections. There have been no noticeable mood

changes through the years. She has always maintained active participation in various activities, particularly those in school which involved programs like helping serve lunches for the children, being in the Mother's Club, etc.

She, a Methodist, has never been interested or active in her own church although she has in some measure taken part in her husband's Catholic church activities. These activities have usually pertained to the children and parochial school as well. She likes sports. Years ago she played softball with various leagues here in Memphis. She played golf rather regularly until about three years ago, stopping at that time because of more children and responsibilities at home. She has had only one close friend whom she has known since high school days. She maintained this friendship until the friend moved out of Memphis and she has had no close friend since. She has told her husband that when she is with people she is afraid she is going to say something wrong. She thinks she is too dumb to carry on an intelligent conversation. This, informant feels, is the reason that she does not mix well with others socially. She seems to, "be unable to relax with others and just won't let herself be herself."

DR. AIVAZIAN: Mr. Cooper, according to the husband has there been any change in personality since the first episode in 1953, or did she make a full recovery?

MR. COOPER: According to the informant she has been in very good emotional health since that time. He has noticed no mood or personality changes.

DR. REESE: You mentioned the moving of her only close friend from Memphis. Could you tell us when this was?

MR. COOPER: I am sorry. I don't know.

DR. REESE: You spoke of hypertension and high blood pressure. Actually they are synonymous. I wonder what your distinction is at this particular time.

MR. COOPER: I was only using the informant's words.

MRS. JEAN C. CHAMBERS: I just wondered if the husband had said anything about the mother and her relation with the patient and the patient's reaction to the mother's death.

MR. COOPER: I'm sorry. I didn't get a clear picture of that either.

DR. OZTURK: Who is training the children in regard to their religion?

MR. COOPER: The children are being reared as Catholics and the patient has cooperated very well. She has helped get them off to school on time and is apparently interested in their getting religious instruction.

DR. REESE: These medications given by other physicians, were they tranquilizing drugs or were they medicines for something else?

MR. COOPER: They were of a tranquilizing nature. He wasn't able to remember the medication and I did arrange for letters to be sent and I'm not sure whether these letters have been returned from the physicians.

DR. REESE: I have here a letter from Dr. B. "Mrs. R. was first seen on January 12, 1957 at the home for the recent development of a psychotic episode manifested by depression and delusional behavior with paranoid tendencies. She was later treated by a private psychiatrist and was last seen by me in the office on March 23, 1957. At this time she still manifested some delusional behavior with considerable somatization. She was advised to seek psychiatric treatment in Gailor Hospital." Unfortunately he doesn't say what these paranoid tendencies were or the nature of the delusions.

DR. AIVAZIAN: Mr. Battle will now review and interpret the psychological findings on this patient.

MR. ALLEN O. BATTLE: Mrs. R. was examined on May 20, 1957 by means of the Bender Visual Motor Gestalt, and one week later by means of the Rorschach Technique, Wechsler Adult Intelligence Scale and tests for agnosia, aphasia, and apraxia. She displays a predominant extratensive orientation to the environment, having no apparently well-developed phantasy defense against environmental frustrations, and, as she is so highly reactive to the environment and lacking in defenses, she is more at its mercy than a healthy personality. Moreover, in view of the fact that her libidinal strivings are strongly narcissistic and that few

environments are so structured as to result in satisfactorily providing these narcissistic supplies, one is justified in considering the patient's adjustment as being particularly vulnerable. The satisfaction of her narcissistic needs would be difficult whether or not the environmental factor is considered since she experiences great difficulty in relating to people. This hostility and need to keep people at a distance militates against the patient's satisfaction of her need for the less mature expressions of libidinal interest. She appears to have very strong desires for actual physical contact rather than a more restrained and sublimated expression of id strivings. The comparative lack of control in the libidinal area is recapitulated in the affective area. In expressing her emotions, Mrs. R. attempts first to inhibit the feeling with a massive counter investment. This inhibition having failed, the form in which the emotion is discharged is almost invariably uncontrolled and of dangerous intensity. In terms of her behavior, therefore, it is likely to appear as if Mrs. R. exerts no control of her emotions, even though an inadequate control is attempted. Even in the absence of internal or external stimuli, Mrs. R.'s ego control is minimally sufficient. It is otherwise easily overcome and in view of the fact that there are strong euphoric and dysphoric elements present in the personality structure the cathexes to be controlled run the gamut in both quantity and quality.

On the Rorschach, Mrs. R. is found to be an *extremely* dependent individual who does not present any indications of a schizophrenic process. She appears, rather, to be suffering an Adult Situational Reaction; Personality Trait Disturbance, Passive Dependent Type. Positive indications of organic brain damage were obtained on the KOhs Blocks subtests of the Wechsler and in the test for semantic aphasia. The findings would indicate temporal lobe involvement, or more specifically, Broca's area. Since the patient has had several EST recently it is impossible to interpret the severity, permanence, or etiology of these findings at this time. Repeat psychologicals should be administered from six to eight weeks following the last EST. Certainly the

EST may well account for the present findings. Mrs. R. also exhibits a pervasive lowering of intellectual functioning at this time, obtaining on the Wechsler, a full scale intelligence quotient of seventy-seven with a verbal of eighty-five and a performance of sixty-eight. This places her in the range of dull normal to borderline intelligence. Her intellectual approach on the Rorschach is that of an individual predominantly reactive to obvious aspects in a body of perceived stimuli. While some compulsive trends are present they are not particularly strong. Her prognosis is fair.

DR. REESE: In view of the fact that this is going to be published and read by non-psychologists and non-psychiatrists I wonder if you could interpret your findings in a little less technical terminology?

MR. BATTLE: It would appear that she is more dependent upon events and individuals outside of herself, that is her environment, for emotional satisfaction than upon herself to a pathological degree. It also is indicated that she has a good deal of ambivalence toward people, having hostility toward them and yet she has to have them in closer contact with herself than one would expect of a mature adult personality since she has so little self-reliance. She is in the situation of being damned if she does and damned if she doesn't, having a kind of feeling of approach to people and yet, feeling that she must stay away from them. Beyond this she shows a pervasive lack of control in terms of her libidinal or sexual strivings, sexual in the greater sense of personal satisfaction, bodily needs, etc. rather than sex in the purely erotic sense. In terms of her overt behavior, while it might appear that this individual is actually relatively uncontrolled, attempts at self-control are made, yet are inadequate, so that the lack of control is not due to an absence in the personality structure as in a psychopathic personality. The euphoric and dysphoric elements refer to the fact that she sees things in both a happy and at the same time an unpleasant perspective which again militates against her control structure in terms of the fact that she is faced with, again, approach tendencies and avoidance tendencies toward people.

I don't know scientifically whether or not the organic pathology preceded the electro-convulsive therapy or whether it is a by-product of it but if it did precede it then we would say it would be more permanent in nature and presumably of a more severe type. We know from some studies that have been done that electro-convulsive therapy does not produce permanent or severe damage in terms of the psychological findings. The localization of the damage to the temporal area or Broca's area done largely on the basis of the fact that there was a finding of semantic aphasia.

DR. AIVAZIAN: Dr. Battle, how do you explain the presence of relatively serious organic findings and the fair prognosis that you foresee in this case?

MR. BATTLE: Because the individual continues to be able to perceive essentially, as most people belonging to her culture. The ego-control as I have mentioned is quite good if you consider that when she isn't particularly stimulated by some factor or factors outside of herself she manages to get along quite well. It is only when affective stimuli or these euphoric or dysphoric cathexes occur that she is likely to, as the saying goes, go to pot. Also in view of the fact that the findings are rather likely attributable to the electroconvulsive therapy which she has received, it would seem that the present findings are artifactual to EST and are not based on a pre-existing condition.

DR. AIVAZIAN: Dr. Barker, have you clinically observed any evidence or indications of organic damage in this patient?

DR. BARKER: No sir, I have not.

DR. REESE: No. She had a very extensive neurological work-up, particularly because of the dilated pupil which was mentioned, and all the tests were negative. There is no evidence, in the history, of any physician having noted a neurological difficulty in the past. We tend to discount its being a pre-existing condition and I am inclined to agree that it is a result of EST.

DR. AIVAZIAN: As time is getting short we will interview the patient now and then proceed with the discussion.

(INTERVIEW BETWEEN DR. AIVAZIAN AND MRS. R.)

DR. AIVAZIAN: Mrs. R., these are staff members of Gailor Hospital, many of whom you have already met. We are interested in your situation so we may be of help to you. Would you please tell us your reasons for coming to this hospital.

MRS. R.: (Patient tense, worried, hands slightly tremulous. Hesitated for a moment . . .) I was sick.

DR. AIVAZIAN: Can you describe how you felt.

MRS. R.: I had nervous spells.

DR. AIVAZIAN: For how long have you been nervous?

MRS. R.: All my life.

DR. AIVAZIAN: Has there been any change in your nervousness in recent months?

MRS. R.: Yes, since I have been here there has.

DR. AIVAZIAN: Can you tell us how your nervousness affected you before you came here?

MRS. R.: Just nervous. (Pause . . .) Just raved all the time.

DR. AIVAZIAN: Raved? How?

MRS. R.: Just hollering and crying. Nervous. (Long pause . . .)

DR. AIVAZIAN: When did this first start?

MRS. R.: About six months ago.

DR. AIVAZIAN: How did it start?

MRS. R.: (Long pause . . .) Just gradually.

DR. AIVAZIAN: Do you remember some of your first symptoms?

MRS. R.: Just nervous.

DR. AIVAZIAN: Did the nervousness interfere in your relationships with others within the family or outside the family?

MRS. R.: (Answer was cryptic.) In my own family. Just made me nervous, that's all. (Patient still tense and uneasy.)

DR. AIVAZIAN: Can you mention some of the things you told your children or your husband at that time?

MRS. R.: Not off-hand. (Fidgety with hands, blushed).

DR. AIVAZIAN: Were you concerned or worried about anything?

MRS. R.: Nothing in particular.

DR. AIVAZIAN: Did you have any physical trouble?

MRS. R.: No physical trouble.

DR. AIVAZIAN: Were you afraid of anything?

MRS. R.: No, sir.

DR. AIVAZIAN: Did you sleep well?

MRS. R.: Not too well.

DR. AIVAZIAN: Why?

MRS. R.: Just couldn't because I was nervous.

DR. AIVAZIAN: Do you know what kept you awake at nights?

MRS. R.: Just thinking.

DR. AIVAZIAN: Can you tell us about the thoughts that kept you awake?

MRS. R.: I don't think I can.

DR. AIVAZIAN: Can you not or would you rather not?

MRS. R.: (Somewhat embarrassed, paused and in a whisper said) Would rather not.

DR. AIVAZIAN: Is it difficult or embarrassing for you to talk in the presence of a large group?

MRS. R.: Yes.

DR. AIVAZIAN: Mrs. R. I know it is difficult, sometimes embarrassing, to talk in the presence of a large group like this. However, it is through learning more about you and your problems that we can help you. (pause . . .)

MRS. R.: Maybe if you would ask me some questions. . . .

DR. AIVAZIAN: About six months ago, was there any particular situation or incident that upset you?

MRS. R.: Yes, sir.

DR. AIVAZIAN: Would you like to tell us about that incident?

MRS. R.: It is awfully hard for me to talk.

DR. AIVAZIAN: Do you know why?

MRS. R.: Just nervousness.

DR. AIVAZIAN: When you look back and remember that incident, does it seem to you as important today as it did then?

MRS. R.: No, sir.

DR. AIVAZIAN: How do you account for the difference in your attitude towards the same situation?

MRS. R.: I have had treatment. It helped a great deal.

DR. AIVAZIAN: Can you tell us how you have been helped?

MRS. R.: My nervous condition settled down.

DR. AIVAZIAN: Has your thinking been altered in any way?

MRS. R.: Some.

DR. AIVAZIAN: In what way?

MRS. R.: It is awfully hard to talk about it.

DR. AIVAZIAN: Can you tell us something about your family?

MRS. R.: I have five children and a husband. Four boys and a girl. The girl is the oldest.

DR. AIVAZIAN: How old is the baby?

MRS. R.: He will be a year old the 12th of June.

DR. AIVAZIAN: Did you have a normal pregnancy?

MRS. R.: No, sir. He was born by a section.

DR. AIVAZIAN: How did you feel after the child was born?

MRS. R.: I had kidney trouble and high blood pressure and a little bit of everything.

DR. AIVAZIAN: After the baby was born?

MRS. R.: It was before and after.

DR. AIVAZIAN: Did anything else happen at the time of childbirth?

MRS. R.: Yes, I had a hysterectomy?

DR. AIVAZIAN: How did you feel about that?

MRS. R.: (With little emotion) It was bad. I hated it, but it was necessary. It had to be done. It upset me.

DR. AIVAZIAN: How did it upset you?

MRS. R.: Just made me nervous.

DR. AIVAZIAN: How long have you been married?

MRS. R.: Eleven years.

DR. AIVAZIAN: Would you describe your husband for us?

MRS. R.: He is a fine man.

DR. AIVAZIAN: Yes, and something about how you get along together?

MRS. R.: (Bland expression, pause . . .) Just fine. (Long pause . . .) He is a fine man.

DR. AIVAZIAN: Any occasional difficulties at home?

MRS. R.: No, sir.

DR. AIVAZIAN: Mrs. R., can you tell us something about your childhood.

MRS. R.: It was normal, I guess.

- DR. AIVAZIAN: Are your parents living?
- MRS. R.: My father is living.
- DR. AIVAZIAN: Can you tell us something about him?
- MRS. R.: He works on a newspaper. He is a mailer.
- DR. AIVAZIAN: What kind of a father has he been to you?
- MRS. R.: He was all right.
- DR. AIVAZIAN: Kind and gentle?
- MRS. R.: He got disturbed at times, of course.
- DR. AIVAZIAN: What was his attitude toward the children, in general?
- MRS. R.: All right.
- DR. AIVAZIAN: How about your mother?
- MRS. R.: She was fine. She had a lung operation about three years ago, when she died. (Same bland expression and indifferent tone of voice.)
- DR. AIVAZIAN: Did you take care of your mother during that illness?
- MRS. R.: Not all the time.
- DR. AIVAZIAN: How did her death affect you?
- MRS. R.: I was upset over it. (No obvious anxiety).
- DR. AIVAZIAN: For how long were you upset?
- MRS. R.: I am still upset.
- DR. AIVAZIAN: Did you have any particular thoughts or feelings at the time of her death?
- MRS. R.: (Very long pause—no attempt to answer.)
- DR. AIVAZIAN: I understand that you belong to the Protestant church and your husband is a Roman Catholic. Has that ever been a cause of friction?
- MRS. R.: Some. Not too much.
- DR. AIVAZIAN: In what way?
- MRS. R.: I would like to become a Catholic, but I don't know much about it.
- DR. AIVAZIAN: How are your children reared?
- MRS. R.: They are Catholic.
- DR. AIVAZIAN: Has that met with your approval?
- MRS. R.: Yes.
- DR. AIVAZIAN: Always?
- MRS. R.: No.
- DR. AIVAZIAN: With whom do you share your problems about religion and children's education?
- MRS. R.: My husband.
- DR. AIVAZIAN: When you have different views what attitude does he take?
- MRS. R.: A normal attitude.
- DR. AIVAZIAN: Normal?
- MRS. R.: He helps with raising them.
- DR. AIVAZIAN: In case of difference of opinion do you each insist on your point of view?
- MRS. R.: Sometimes.
- DR. AIVAZIAN: Who gives in most of the time?
- MRS. R.: He usually does. (Mild embarrassment)
- DR. AIVAZIAN: Has there been any problem of particular importance between you and your husband during the last year?
- MRS. R.: Yes.
- DR. AIVAZIAN: Would you tell us about it?
- MRS. R.: No, sir.
- DR. AIVAZIAN: Can you give us an idea?
- MRS. R.: No. (Patient seemed more relaxed but not productive.)
- DR. AIVAZIAN: Now that you are used to everyone in this room and appear more relaxed, you may perhaps tell us something about the disturbing thoughts that began to appear in your mind five or six months ago.
- MRS. R.: Were you speaking of religion?
- DR. AIVAZIAN: Any disturbing thought?
- MRS. R.: You mean when I first got sick? Everything seemed to bother me.
- DR. AIVAZIAN: What was your main worry at that time?
- MRS. R.: Everything, I guess.
- DR. AIVAZIAN: Anything in particular, you had done or said, that bothered you?
- MRS. R.: No, sir.
- DR. AIVAZIAN: Was there anything in people's attitude towards you that caused you some concern?
- MRS. R.: There might be.
- DR. AIVAZIAN: Yes?
- MRS. R.: It is awfully hard to talk.
- DR. AIVAZIAN: Why is it hard?
- MRS. R.: No particular reason, I guess.
- DR. AIVAZIAN: How do you feel towards the same events now?
- MRS. R.: I should be ashamed of myself, I guess. (blushed).

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Revised Principles of Medical Ethics Mailed To TSMA Members

● A pamphlet, containing the revised Principles of Medical Ethics, as adopted by the American Medical Association in June of this year, has been mailed to all members of the Tennessee State Medical Association. A resolution adopted by the House of Delegates in 1956 directed that upon the adoption of the revised Code of Ethics, that copies be mailed to all members of the Association for their information and guidance.

Professional Overhead Expense Insurance

● Upon the recommendation of the Insurance Committee and action of the House of Delegates in April, 1957, a professional overhead insurance program was approved for those physicians in the state who wished to participate. In July, the agents for the American Casualty Company, mailed a brochure to all physicians of the state setting forth the highlights of the plan and the method of participation by members of TSMA who desire to take advantage of this type of insurance. If you have further inquiries relative to the brochure, you may contact the agents presenting the plan or the headquarters office of TSMA and we shall be glad to furnish additional information.

New Data on Medicare Program

● The Medicare Program was the subject of three resolutions adopted by the House of Delegates of the AMA in June 1957. One resolution condemned any payments under the program "to or on behalf of any resident, fellow, interne or other house officer in similar status who is participating in a training program." It was declared that government sanction of such payments would give impetus to improper corporate practice of medicine by hospitals or other non-medical bodies. The House added that such proposals would violate traditional patterns of American Medical practices, seriously aggravate problems of hospital-physician relations, encourage charges by hospitals for resident's services to patients not under the Medicare program and create additional problems in such areas as medical licensure and health insurance.

Decision on Medicare Contract Up to Each State

● In another action on Medicare, the AMA House recommended that the decision on type of contract and whether or not a fee schedule is included in future contract negotiations should be left to individual state determination. The House re-stated the AMA contention that: the Dependent Medical Care Act as enacted by Congress does not require fixed fee schedules; the establishment of such schedules would be more expensive than permitting physicians to charge their normal fees and fixed fee schedules would ultimately disrupt the economics of medical practice.

The House suggested that AMA attempt to have existing Medicare regulations amended to incorporate the association's policy that the practice of anesthesiology, pathology, radiology and physical medicine constitute the practice

of medicine and the fees for services by physicians in these specialties should be paid to the physician rendering the services.

Two Tennessee Resolutions Presented At AMA House

● Two resolutions were presented to the AMA House as directed by the House of Delegates of TSMA. The first resolution dealt with the right of free choice of physician and this resolution was unanimously adopted. The second resolution had to do with legislative changes in the allocation of funds from the federal government to the departments of health of the State. This resolution was not rejected, since the Reference Committee recommendation was that it be referred to the Council on Medical Service to be further studied by the committee on Indigent Care and reported upon at the next meeting of the AMA House of Delegates.

Contact Your Congressman

● Now is the time to contact your congressman and senators—asking support for the Jenkins-Keogh bills. Even if action is not taken by Congress at the 1957 session, a big push for this tax deferment retirement plan type legislation which is of prime importance to self-employed (physicians) is bound to come next year when tax measures will get careful study.

Doctors Draft Act

● The much debated doctors draft act expired on June 30th after almost seven years of existence. A mild substitute law took its place, (HR 6548), authorizing the President to make special call-up of physicians under regular selective service law. Under the new act, doctors deferred to finish education can be drafted through age 35 as members of the profession, but not by age groups, as regular registrants.

PR Institute, Chicago August 28-29

● Public relations conscious members of TSMA will want to plan to attend the AMA's public relations institute at the Drake Hotel in Chicago on August 28-29. This annual two-day event, which falls on Wednesday and Thursday is a very valuable meeting. It is anticipated that physicians who wish can return from Chicago with workable, practical information for a worthwhile PR program in their respective county medical societies.

Inter-Professional Code

● Your attention is directed to page 344 of this issue of the Journal for the complete contents of the Inter-Professional Code arrived at between the Legal Relations and Inter-Professional Code Committee of the TSMA and the Tennessee Bar Association. This is an important and far-reaching agreement between lawyers and doctors and sets forth many clarifications in the relations of the two professions. There has been considerable interest shown in this subject by physician members of TSMA and the code has now been approved by the two organizations.

Second County Medical Society Officers Conference

● Plans are being made for the second county medical society officers conference to be conducted February 23rd, 1958. It is necessary to make arrangements and secure speakers far in advance for this type of meeting and plans are underway, subject to approval of the Board of Trustees, to present a program that will be of significant interest to the officers of the TSMA and all county medical societies. The meeting is planned for the beginning of the year in order that new officers can take advantage of the material presented. At the same time, it is planned to conduct the meeting at a time far enough away from the annual meeting so that maximum results will be obtained. More details on the County Society Officers Conference will be announced in the months ahead.

Public Service

THE TENNESSEE TEN

Rural Health Committee Meets

● Representatives of groups interested in the betterment of health conditions in Tennessee's rural areas attended a meeting of the Rural Health Committee, July 30 at the TSMA building in Nashville. Dr. William N. Cook, Chairman, of Columbia, presided. The meeting was called by Dr. Cook to give the members an opportunity to hear suggestions as to what type of programs the committee could adopt.

Dr. Cyril J. Ruilmann, Tennessee Commissioner of Mental Health, and Dr. R. H. Hutcheson, Tennessee Commissioner of Public Health, were in agreement that one of the major problems facing Tennessee's non-urban areas is the plight of the "Senior Citizens," those persons over the age of 65.

Mental Hospitals A "Dumping Ground"

● Dr. Ruilmann told the committee that the state's large mental institutions have become a "dumping ground" for elderly people. He stated that half of the elderly persons admitted were suffering from preventable diseases which could be treated in their own communities.

Dr. Hutcheson pointed out that chronic diseases are a major problem in this age group and that lack of medical information getting to such persons is one of the greatest failures in organized medicine's health education program.

E. C. McReynolds, Associate Director of the University of Tennessee's Agricultural Extension Service, told the group that sanitation, and especially sewage disposal, continues to be a problem in rural areas, although the situation has been improved.

Diet Important

● Miss Sue Mayo, Health and Nutrition Specialist of the Extension Service, stated that the importance of good diet should be stressed as part of a total health education program. Miss Mayo also stressed the need for informing the public of the need for a sensible weight reducing diet and the attendant ills which may accompany "fad diets."

Strong emphasis on a continuing program of flouridation to reduce dental caries in children was urged by Dr. Robert L. Matthews, Chairman of the Council on Dental Health of the Tennessee State Dental Association.

Flouridation treatment of water can reduce cavities in children whose teeth are forming by 60 per cent according to Dr. Matthews.

Doctor, Nurse Shortage

● The nursing shortage, especially in Tennessee's rural areas, was outlined by Miss Mary Elizabeth Dunn, Director of the Tennessee State Nursing Association.

The shortage of doctors and nurses in rural areas was cited by Kenneth Cherry, Tennessee Farm Bureau Federation.

Health Councils Proposed

● Alvin Blake, editor of the Farm Bureau News, said the Farm Bureau would be willing to cooperate in rural health improvement and suggested the organization of county health councils.

Dr. John M. Jackson, Springfield, a member of the committee, proposed that health councils be set up in each of the

ten committee areas to serve as pilot models for other counties in the state.

The committee will study the recommendations and suggestions made and formulate its long-range program.

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Auxiliary to Sponsor Arts, Crafts Exhibit

● Tennessee doctors and their wives, who have a working interest in such hobbies as photography, painting, and hand work, will have an opportunity to display the results of their talent at Gatlinburg next April. A committee of TSMA's Woman's Auxiliary, with Mrs. J. Thomas Bryan, Nashville, as chairman, has announced preliminary plans for an arts and crafts exhibit to be held in connection with the 1958 State Meeting. Other members of the committee are: Mrs. John M. Wilson, Johnson City; Mrs. Charles N. Hickman, Bells City; Mrs. William R. Buttram, Sr., Chattanooga; and Mrs. Roy A. Douglass, Huntingdon. Mrs. Joe D. Anderson, State President, Nashville, suggested the exhibit as a project of the Auxiliary.

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TSMA Contributes To Dr. Clark Fund

● A check for \$200 was turned over by Dr. Charles C. Traubue, IV, Nashville, Chairman of TSMA's Board of Trustees, to a fund sponsored by the "Nashville Tennessean" to assist Dr. Cecil Clark in re-building and re-equipping his clinic, destroyed by "Hurricane Audrey." The Cameron Parish, Louisiana, physician won nation-wide acclaim for his heroic actions in ministering to the wounded unceasingly while the fate of his own family was not known. The contribution was authorized by the Board's Executive Sub-Committee.

In connection with the presentation of the check, Dr. J. Paul Baird, TSMA President, said, "The Association is always deeply gratified to learn of examples of this type of dedicated service on the part of the individual physician."

President of the Nashville Academy of Medicine, Dr. W. O. Vaughan, presented the fund a check for \$100 on behalf of the Academy.

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Doctors Asked To Help Detect "Asiatic Flu"

● Tennessee physicians have been asked to assist the State Health Department in detecting indications of a possible outbreak of Asiatic Flu in the state. Dr. C. B. Tucker, Chief, Preventible Disease Division, has asked doctors to submit blood samples to his department in any cases in which the flu is suspected. AMA reports that six of the nation's pharmaceutical companies have been licensed to manufacture the flu vaccine, which is expected to be available in quantity this fall. U. S. Public Health says the epidemic rate in the Philippines ran as high as 15 to 20 per cent, but the mortality rate was less than one per cent, "principally among infants and the aged."

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Attendance Urged At AMA's Annual P. R. Conference

● Tennessee doctors, interested in bettering the public relations and public service programs of their county societies, are urged to attend the AMA Public Relations Institute in Chicago. The day-and-a-half program, August 28 and 29, at the Drake Hotel, will discuss practical problems involving medicine and publicity. Additional information concerning the institute can be obtained from the Public Service Office. The office will also make reservations upon request of doctors wishing to attend.

Jack Drake
Public Service Director

DR. AIVAZIAN: Why should you be ashamed of yourself?

MRS. R.: Acting like I did.

DR. AIVAZIAN: Have you ever been worried about your health?

MRS. R.: Yes.

DR. AIVAZIAN: Any reason?

MRS. R.: The last baby was a boy and it was a section birth.

DR. AIVAZIAN: Any illness?

MRS. R.: No.

DR. AIVAZIAN: Fear of illness?

MRS. R.: (long pause . . .)

DR. AIVAZIAN: I believe you told Dr. Barker that you were afraid of some particular illness.

MRS. R.: I do not know whether she was referring to tuberculosis or not.

DR. AIVAZIAN: Were you afraid of tuberculosis?

MRS. R.: I just thought I had it.

DR. AIVAZIAN: And now?

MRS. R.: I think it was foolish.

DR. AIVAZIAN: Are you afraid of any illness now?

MRS. R.: No.

DR. AIVAZIAN: How did those thoughts affect you?

MRS. R.: I was awfully upset and nervous.

DR. AIVAZIAN: What about your mood?

MRS. R.: It was terrible.

DR. AIVAZIAN: Any other way of describing it besides terrible?

MRS. R.: No, sir. I think that is enough. (somewhat firmly)

DR. AIVAZIAN: And how do you feel now?

MRS. R.: Much better.

DR. AIVAZIAN: Do you feel that you need further help?

MRS. R.: No.

DR. AIVAZIAN: How do you feel about the future?

MRS. R.: I have a bright one.

DR. AIVAZIAN: Do you feel confident and ready to take charge of your responsibilities once again?

MRS. R.: Yes, if it meets with your approval.

DR. AIVAZIAN: We would like to know how you feel about the situation yourself.

MRS. R.: I feel all right about it.

DR. AIVAZIAN: Very good, Mrs. R. We will let you know.

(DISCUSSION FOLLOWING INTERVIEW WITH PATIENT.)

DR. AIVAZIAN: Before starting the discussion are there any questions?

DR. OZTURK: It is understandable that the patient was not very comfortable during the conference, but I wondered whether she relates better during individual interviews.

DR. BARKER: There is very little difference. She is always hesitant to speak about herself and a couple of weeks ago when she was presented on ward rounds the experience upset her a great deal and she came to me immediately afterwards and said "Didn't I do just terrible. I'm so embarrassed. I certainly hope I don't ever have to go through anything like that again."

DR. REESE: Has she ever been able to elaborate on the subject of this terrible sin that she either has committed or is afraid that she might commit?

DR. BARKER: No. All she will say is that she feels like she is harming her family and her family is going to suffer because of her but she is unable to give any reason for this.

DR. REESE: What has been her reaction to any inquiries about suicidal ideation?

DR. BARKER: She has denied any desire to actually harm herself.

DR. AIVAZIAN: At this point I think it would be good to summarize some of the pertinent points of this woman's previous personality. Dr. Barker would you do that?

DR. BARKER: According to what the husband and the patient both say, she has always had difficulty getting along with people, is slow to talk with anyone. After church she will leave rapidly immediately going to the car to avoid having to speak to anyone. Her only interests outside of the home have been these few athletic pursuits, such as golf and softball. She has diligently tried to fulfill any sort of obligation that she might be called on as a wife and mother and has worked a lot in PTA and church activities, doing a lot of work but actually contributing little of her personality.

DR. AIVAZIAN: Although there are definite defects in this woman's previous per-

sonality until 1953 she had made a fairly good adjustment and then she had one episode from which, according to the husband, she recovered fully and maintained her emotional health for another four years until the present episode occurred. This brings forth the importance of the stress factors in this case. Dr. Liberakis, would you please discuss for us briefly the stress factors in this woman's case and their importance.

DR. EUSTACE LIBERAKIS: I think the stress factor in this case is very important although it is not chronologically immediately related. I believe that the operation she had increased her feelings of unworthiness, and I think maybe this is the most important stress factor.

DR. BARKER: The husband states that at the time the operation was performed she asked him if it would affect her mind and had gotten the idea from some sort of old wives' tale that the removal of the uterus frequently led to insanity. She did not seem concerned about any change in her femininity or was not worried about a change of life at that time because the physicians had assured her that this would not occur. She states that she did not want her uterus removed at all because they had planned to have one more child and she thinks she has been cheated because she didn't get to have six children. The husband denies this and says that they had never planned on any definite number of children and he is perfectly content to go through life with five.

DR. AIVAZIAN: Dr. Reese would you make your comments about the differential diagnosis and the dynamics?

DR. REESE: I think that the differential diagnosis, insofar as we have to jam it into some sort of descriptive classification, is not nearly so important as to recognize the profound influence of the emotional factors involved in producing the symptoms. However, so as not to evade the question I think that two possibilities should be borne in mind, (1) psychotic or neurotic depressive reaction, and (2) schizophrenic reaction. In view of the fact that there has been "a previous episode," and on each occasion there has been a depressive element clearly involved, the possibility of a Manic Depres-

sive Psychosis needs to be considered. However, I don't believe she qualifies for this category. The previous episode was supposed to have been so brief in its overt manifestations as not to be typical of a psychotic depression. She gave a clue to this when she stated that actually she had not recovered from the death of her mother. I think in trying to piece together the few remarks that she does drop here and there that she has tried to cover her feelings which were very definitely set off at that time. Therefore I don't consider the onset so much to be the hysterectomy or the birth of the last child as rather the latest in a series of events which have been traumatic for this woman during this period. Also some of what I at first took to be evidence of depression in this woman has subsequently turned out to be in part a real difficulty on her part in verbalizing, probably due to a lower intelligence than we originally credited her with having. The stress factors that she had had to deal with are not so extra-ordinary but what people face all the time. It has been her almost completely inadequate response in dealing with them over a period of time that makes me feel that we are dealing with a more malignant process, namely incipient schizophrenia, than simple reactive depression or situational neurosis. After all, this criticism that she felt that she received back in January from the members of the PTA group is totally unrealistic. It was very easily demonstrable that she had done nothing which would incur their wrath on a personal basis, yet she invested so much emotion in it that it seems to be fairly clear that this was a displacement of anxiety on an irrelevant factor. The anxiety is associated with almost complete feeling of unworthiness, inadequacy, and guilt. From the way she discusses her children almost by denial of anything unpleasant with the activity and effort that she has put in for them, one considers the possible reaction formation here against real hostility toward them for curtailment of activities of her own. Also there is added stress since she feels inadequate as a mother and a wife and therefore can't actually enjoy caring for them. Although it has not been directly brought out she probably en-

terains suicidal ideas as a turning in of the hostility and in view of her Catholic leanings this may well be the great sin that she is afraid of. This and previous interviews and the type of embarrassment that she showed indicates a real area of sexual difficulty with her husband, as this was the area where she did not want to respond to the questioning. This being true, I am interested in what the psychologicals may have shown in terms of her sexual identification. Is it basically feminine? She certainly, in general appearance has a somewhat masculine quality which is not immediately apparent, necessarily, but a certain manner and carriage. I wonder what ambivalence there may be in that area. There is no doubt but what her behavior represents an inadequate ability on her part to control her emotions and indicates a regressive process with these outbursts which she terms as ranting. I think possibly her husband has done some covering up for her.

DR. JAMES A. TAYLOR: You haven't mentioned the obsessive and compulsive qualities of this woman. Would you like to discuss them?

DR. REESE: The obsessive qualities of her thinking stand out very clearly. Certainly she has been unable to get rid of her unwelcome thoughts which is typical of displaced anxiety. The compulsivity has not been nearly so readily apparent. She has attempted to control things with the frequently seen reaction of a person who feels so insecure that they do not care to leave anything to chance. It is difficult enough for her to make a plan so that now when any deviation comes she feels panicked by it and blows up. Thus, there is compulsivity in trying to keep things organized and held together, but I don't see compulsivity in a ritual type of undoing or something of that nature. There is much in her which would be suggestive of an involutional psychosis if she were ten years older, and her hysterectomy did not involve oophorectomy. It has been often noted that a person who appears involutional much too early in chronological age is actually a schizophrenic or on the way to becoming one. We can't actually put our finger on any one thing that should have upset her

enough to call it a reactive depression, unless we term it the death of the mother and it didn't follow that adequately. She just appears to be disintegrating in her capacity to keep things organized in the face of the stress of everyday life. The one hopeful factor here is that she did make a reasonably good adjustment up until the last few years but the stresses of increasing age make me wonder how capable she is going to be of managing the future. I would tend toward a schizophrenic process which has not become clear-cut and don't forget that she had already received a certain amount of treatment before she ever came to us, and paranoid features were mentioned as being noticeable in the past.

DR. BARKER: Because of this woman's preoccupation with the opinion of others and because of the obsessive compulsive elements in relationship we sometimes see with certain paranoid schizophrenics, I have explored that possibility both with her and with the husband. They both consistently deny any ideas of outside influence or any fear of being harmed from people. There is a neighbor with whom she has always been closely associated, whom she has begun to reject recently, with the feeling that this woman cannot be trusted with any confidence, lest she go about the neighborhood and gossip and cause the patient further embarrassment. She has become quite cool in the presence of this neighbor. The husband said some of these fears are justified, that the woman actually does talk a great deal out of turn and that he has a tendency to watch his own step when he talks with her about personal matters. That's the only possible paranoid element I have been able to find.

DR. OZTURK: I would like to point out two aspects of the case which I found interesting. First of all, the clinical picture that was described to us at the time of the onset of the illness and until she got better is rather reminiscent of involutional depressive reaction with a lot of agitation and self-depreciatory ideas, etc. However, she doesn't belong to that age and this brings forth the importance of the hysterectomy in this case, which often is very important in producing reactive depression, unless the

patients are prepared for such operations. In regard to this hysterectomy and the previous defense structure of this woman, if we look at the personality background she has been able to adjust fairly well as a mother, as a housewife, etc., and secondly she has not had other types of differences which are suggestive of a schizophrenic type of reaction. For instance, the fantasy life. She has had a very dull fantasy life. She has been brought up as a rather insecure person with a lot of feelings of inadequacy, etc. Her hysterectomy has meant quite a lot to her in breaking down her former level of adjustment and she has developed anxiety symptoms which are manifest in the physical realm: the headaches, blurring of visions, pains, etc. (physiological symptoms of anxiety) and then more or less a failure or paralyzing of her already weak ego from the rather severe depressive reaction occurring in a neurotic character of possibly what the psychological tests indicate as a passive aggressive type. I wouldn't be too much involved with the diagnosis but the clinical picture is more suggestive of a depressive reaction precipitated mostly by environmental factors, such as mother's death, mourning about mother's death; after that the birth of children and complications of pregnancy then finally her hysterectomy.

DR. WILLIAM A. McBRIDE: If we follow our dynamics of the idea of the involuntional reaction whether the ovaries were removed or not in the operation, still the maternal function is removed and we frequently see the idea of the loss of this potential motherhood, or the other ideas that might go with her Catholic leanings, precipitating some pretty deep feelings in that area.

DR. REESE: I didn't mean to minimize the importance of the hysterectomy in terms of the involuntional depressive picture. Actually, it has been pretty well shown that there is little or no relation whatsoever between the endocrinological changes inherent in the involuntional period and the psychoses which do occur at the same time. It is the psychological reaction to the physiological state which seems to be the most important angle rather than the involution, per se.

DR. AIVAZIAN: I believe the case was

well covered from several angles and to summarize some of the thoughts expressed, the first question we meet here is the organic element versus the psychogenic element. Clinically, we have not seen much evidence of organic damage to the brain. On the other hand the level of intelligence is below average. This is important because of the difficulty that such persons have in verbalizing their thoughts and feelings. In the background, although we don't have too much information about her childhood, it is apparent that this woman has shown a great deal of dependency throughout her life, upon others, and her adjustments then, even though they look now fairly precarious, probably did not seem so until she had her present breakdown. Dr. Reese has stressed one point, which to my mind is of utmost significance and this is the poor feminine identification made in early life and its repercussions later on, on her role as a woman. There is plenty of evidence along this line in her poor sexual adjustment. Sexual relations were scarce, with little gratification. I attach great importance to the hysterectomy in her sexual adjustment and the role she has played in the past, and what she is facing since the time of the operation. In the past, because of perhaps several excuses, fear of frequent pregnancies and so on, she had one way of avoiding frequent intercourse with her husband. Now with the removal of the uterus she feels that she has lost part of herself as a woman, and a mother; also when she faces the future, especially in relation to her sexual life I think she has lost one of her defenses towards denial of sexual relations with the husband. Another point of extreme interest, I believe, from the emotional angle is the handling of hostility by this woman. Once again Dr. Reese referred to the importance of the religious conflict which has played its role probably behind the scenes. She is a Protestant and she has given in to her husband's wishes in religious matters. How much discontent and hostility did this arouse within her? In the general management of the family, and so on, how did she handle her hostility? Probably she handled it very poorly at the cost of severe repression at most times and

through indirect expression of hostility at all times as the history indicates, through her behavior, obsessive elements, compulsive elements, etc. However, these were not significantly evident at any time in the past to be recognized as definitely neurotic in nature. During her present hospitalization, I was most impressed with her inability to verbalize. Making full allowance for her intelligence level, plus her bashfulness and timidity I can still not explain the poverty of thought that she has manifested at most times. In addition to that, since the institution of ECT whereby the depressive element was fairly well eliminated, her emotional state has not shown that degree of vividness one would expect to see. Now, these two elements, namely poverty of thought and diminished affect, make me think of a more serious disturbance like a schizophrenic process of the chronic undifferentiated type rather than a pure and simple psychotic depressive reaction. One last question for your consideration is disposition of this case. Dr. Reese what would be your recommendations?

DR. REESE: Frankly that is one of the reasons I recommended that this patient come to Staff, because I am at something of a loss as to what to recommend for her at the present time. I think the thing that bothers me most is the progressive downhill course that she has followed to some extent over a period of time with repeated stresses which are most apt to continue in one form or another as her children grow older, as her elderly father passes away and she actually enters the true involutional age. Her ultimate prognosis does not appear good and I'm asking for help in terms of disposition.

DR. BARKER: Actually I think very little change can be expected to be brought about in her environment. I think we can keep her here as long as possible and send her back with the hope that she can withstand it. I doubt seriously whether she will make a complete recovery.

DR. OZTURK: The patient appears to be considerably improved. We cannot expect radical personality changes in this woman but I think a trial visit home might work out well. She should come once in two or

three weeks to see Dr. Barker on a supportive basis, and she may probably do fairly well. I think we can expect her to form an adjustment to some degree.

DR. BARKER: Actually she has not shown any dramatic change as a result of ECT but perhaps we could put her on a maintenance dose of it and give her occasional treatments on an out-patient basis.

DR. REESE: I don't know how clear it has been made that we gave her the ECT for the depressive elements which we saw here and for that reason alone. I don't think that extensive psychotherapy with the goal of insight is indicated unless it could be carried over an extremely long period of time because I don't think her ego-strength is enough to support such attempts, so I have been thinking in terms of supportive therapy but specific recommendations are hard to figure out.

DR. AIVAZIAN: Dr. Reese, do you see the need for more intensive physical treatment with insulin, for example or tranquilizing drugs before the patient is discharged from the hospital?

DR. REESE: I don't believe that I see any indication for insulin therapy, however I do think that tranquillizing medication should be insisted upon. As was noted before she has been on Sparine with some slight improvement. I think that we would probably take her off the Sparine and put her on other medication to hold down the intensity of the anxiety which she feels under stresses at home.

DR. AIVAZIAN: In the light of the evolution of the illness during the last six months when she had shown, at least on one occasion, very definite improvement for about three weeks, and then relapsed, I think it would be best to keep the patient in the hospital for some time yet, and follow the evolution of the present improvement phrase and see how well it can be maintained with additional support offered to her with tranquillizing drugs and psychotherapeutic assistance. After a few weeks, if she inspires confidence that she will be able to maintain herself at a satisfactory level of improvement then I think that will be the time to discharge her from the hospital.

CLINICOPATHOLOGIC CONFERENCE

Baptist Memorial Hospital*

Hemorrhage into the Intestinal Wall of a Patient on Anticoagulant Therapy

Clinical Abstract

This sixty-five year old white woman had a sudden onset of severe epigastric pain radiating to the left chest two days before admission. It was unaffected by Gelucil. She sweated profusely and complained of weakness; however, in two hours the pain gradually subsided. The following day she continued to feel weak and complained of epigastric soreness. She consulted her local doctor, who made an electrocardiogram.

She was a known hypertensive for many years and was told in 1938 that she had a left bundle branch block, but gave no previous history of chest pain, dyspnea, or cough. She was a known diabetic for eight years, placed on insulin for a time, but recently had been maintained on diet only. For many years she had complained of mild intermittent epigastric pain and excessive flatus.

Physical examination revealed no unusual findings. Normal TPR, blood pressure 160/90. EKG revealed left bundle branch block; ST elevations in V_1 , 2 and 3 ; depressed ST in V_1 , 2 and 6 ; diphasic T wave in many leads. Clinitest for urine sugar was repeatedly negative during the hospital stay.

The patient was placed on bedrest and given peritrate, phenobarbital, nitroglycerin, phenaphen with codeine, and coumadin. Prothrombin time was maintained between 30 sec. and $41\frac{1}{2}$ sec. throughout the patient's hospital stay. She was discharged to her home on the fourteenth hospital day.

Almost exactly nine months later the patient was readmitted to the hospital. Four days prior to admission she was awakened at night with generalized low abdominal pain. She took cremalin without relief. The pain was never colicky, did not radiate but steadily became more severe. She was anorexic and vomited several times the following day, and her symptoms continued essentially unchanged until admission. She continued to have normal bowel movements and complained of no respiratory or genito-urinary symptoms.

Physical examination revealed a moderately obese woman with generalized abdominal tenderness and marked rebound tenderness particularly in the right lower quadrant but abdomen was soft throughout. Peristalsis was heard. Rectal exami-

nation elicited moderate tenderness on the right. Pelvic examination revealed a firm, globular, slightly tender mass to the left of the cervix. The remainder of the physical examination was not remarkable. TPR were normal, and the blood pressure was 190/100. Admission urine showed 3 plus glucose and 1 plus acetone; Hgb. 10.2 gm., WBC 15,900 with 77% segmented forms, and a prothrombin time of 34 seconds.

An operation was performed on the day of admission.

Discussion

DR. CHARLES J. DEERE: We may profit by trying to visualize the type of patient this lady was immediately before any of the attacks that are mentioned in this history. She was 65, which means she was several years postmenopausal. She is described as being moderately obese and is said to have been hypertensive for many years, and a diabetic for at least eight years. Finally, she is said to have had a left bundle branch block for at least eighteen years. She gave no past history suggesting coronary insufficiency or myocardial failure. Left bundle branch block is seen in a number of conditions, but in a patient presenting these findings, and in fact in any other patient, statistically I think we are reasonably safe in assuming that it is based upon coronary artery disease. Many of the cases, as seems true in this case, are associated with hypertension. The pathologic physiology involved is presumably either fibrotic, degenerative, or ischemic interference with the nutrition of the components of the bundle branches. We may see bundle branch block in patients as a complication of myocardial infarction, but it is also seen in the absence of gross infarction, as probably was true of this lady. Of course it may be seen in the absence of coronary insufficiency or any other symptoms of any type. I think from this information we would assume, as did this patient's clinician, that she had all of the necessary indications of having coronary arteriosclerosis.

One other thing mentioned concerning her past is, that she was afflicted with indigestion and made it a point apparently to keep antacids in the house. This may be characteristic of the ulcer patient, but many people without ulcers keep such remedies available.

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Now the incident nine months prior to this last admission, is described as a sudden onset of severe epigastric pain which radiated to the left chest. This pain is said to have subsided gradually over a period of two hours, and it was associated with profuse sweating and weakness. The following day she manifested epigastric soreness. At this time her physician made the diagnosis of an acute intra-abdominal catastrophe or a myocardial infarction. Some of the features of this illness are not typical of infarction, but of course many cases of infarction are not. For one thing, many patients who suffer myocardial infarction do have some premonitory or warning distress or they may have a gradually but somewhat rapidly increasing severity of pain. Often it is not dramatically sudden and immediately terrifying from the very beginning of pain.

Another feature is the mention of epigastric soreness which was present the day after the attack. I do not believe that this is characteristic of myocardial infarction. The electrocardiographic changes described are not diagnostic of myocardial infarction, which is notoriously difficult to impossible to diagnose electrocardiographically in the patient who has a left bundle branch block. It might be worth mentioning some of the newer tests that are being made available to us, such as the SGOT or the transaminase determination doubtless will be of help to us in diagnosing myocardial infarction in those patients who already have a left bundle branch block.

The treatment prescribed by this patient's clinician indicated that he considered this attack as most likely myocardial infarction. She was treated with the conventional measures including prothrombin depressants, and we assume from the fact that a prothrombin time was checked on the second admission, that she probably had been on continuous anticoagulant therapy although the record does not so state. Concerning this initial episode, it seems really somewhat unnecessary to go through the differential diagnosis of upper abdominal conditions. I don't think that there is really very much to suggest that this attack was cholecystic, pancreatic or related to peptic

ulceration. Certainly it would be possible to have a perforation that heals quickly and gives a picture somewhat like this, especially in view of the soreness the patient had the following day.

Nine months later, this patient was readmitted with a four day history of generalized lower abdominal pain which did not radiate, was not colicky and was steadily increasing in severity. Associated symptoms were nausea and vomiting, but she had continued to have normal stools. The important point mentioned in the physical examination is that this patient had a soft, but tender abdomen, in which peristalsis was heard. These findings plus the history of normal stools argue somewhat against the patient's having generalized peritonitis or a major vascular occlusion involving the bowel. She was described as being more tender on the right on both abdominal and rectal palpation. The pelvic examination revealed a firm lobular slightly tender mass to the left of the cervix. I think it would be useful to have a little more description concerning this finding. The size of the mass and its mobility might be of some interest. Such things as torsion of a fibroid or an ovarian cyst certainly would be given some thought in a patient presenting such a picture. The statement is made that the remainder of the physical examination is not remarkable and on the earlier admission it was stated that there were no unusual findings. I think we could use better phraseology for we don't know what the usual findings are for any particular patient.

On the initial admission she had no glucosuria in spite of the fact that she was said to have been a diabetic. On the latter admission she had a three plus glycosuria; possibly that means that this illness was subjecting her to more stress than the initial illness. Another interesting finding is that she had a moderate grade of anemia. Her blood count during the earlier admission is not mentioned. I assume that it was normal. She also had a moderate polymorphonuclear leukocytosis.

From the treatment advised, it is obvious that the attendants of this patient felt that she had suffered a catastrophe, and we would have to agree with that. Prompt op-

erative treatment was chosen. We have to ask ourselves what did they expect to find, and of course that is what we are supposed to try to predict. There is not very much likelihood that we would be dealing with a tumor. There is very little really to suggest that we are dealing with an intra-abdominal infection. I am more inclined to think that this represents a vascular accident. Points favoring concealed blood loss are the low hemoglobin and the statement mentioned earlier concerning this patient's general makeup. In discussing this we should go through points that would favor, for example, diverticulitis with an abscess, or something of that sort. We would need a little more information concerning the mass. The leukocytosis is not impressive for a four day catastrophe involving soiling of the peritoneal cavity. The most likely diagnosis in this patient is atheroma of the aorta with medial necrosis, intramural dissection of the aorta, and later rupture back into the aortic lumen at the earlier admission. Her last admission represented another period of active dissection and probable complete rupture through the aortic adventitia with periaortic hematoma.

DR. CHARLES V. DOWLING: In this case there was surgical consultation, so we would like to have the point of view of a surgeon relative to these findings.

DR. C. E. GILLESPIE: I wasn't fortunate or unfortunate enough to be consulted originally on this patient. After listening to the discussion I am not sure that I can add very much. There were two or three things however that impressed me and one was the consideration of diabetes as the underlying cause of the abdominal complaint. We know that we can have a patient in diabetic acidosis giving abdominal pain and that it is extremely difficult to make a diagnosis in such cases. First, we have to suspect the acidosis and then we have to be sure that the acidosis is the primary lesion. Of course acidosis would not explain the mass. On this admission there was a three plus glycosuria, and I wondered if a blood sugar and CO_2 combining power were done.

Another thing that interested me was that the patient probably had been on continued anticoagulant therapy. We have been called

into consultation several times to attempt to make a differential diagnosis between some kind of an acute inflammatory process, such as appendicitis and intra-abdominal hemorrhage—either hemorrhage into the bowel wall or retroperitoneal hemorrhage. I saw one patient in this same age group who apparently had an appendiceal abscess. For several days we were unable to make a diagnosis between appendiceal abscess and hemorrhage around the ileocecal region. These certainly are possibilities to be considered here, as well as the aneurysm mentioned by Doctor Deere.

I am not certain that this patient did not have a neoplasm. There was a history of digestive disturbance for a long time, and it is possible that she had a lesion in the stomach which had metastasized to the ovary, i.e., a Krukenberg type of tumor. A gastric tumor would explain the anemia. Then we have to consider primary tumors elsewhere in the gastrointestinal tract or retroperitoneal type of tumor.

I was somewhat lost to decide on what basis was the indication for prompt surgery in this case judging from information given us. Perhaps some X-rays shed more light. I will have to agree with Doctor Deere that the diagnosis is most likely some type of vascular catastrophe but possibly in the intestinal wall.

DR. DOWLING: We are not withholding any X-ray information. There were no films made on this patient. Now could we have another internist's point of view on this patient?

DR. THOMAS N. STERN: Diagnostically, I really don't have anything to add to what has been already said, but some help might be obtained if the electrocardiograms were available. Doctor Deere said that the diagnosis of myocardial infarction is difficult in the presence of left bundle branch block, and this is indeed true when you have only one electrocardiogram to look at. It is particularly true of old myocardial infarctions. However, if there is a significant infarction you should get, and usually do get, some changes in the electrocardiogram that are strongly suggestive even in spite of the presence of bundle branch block. The injury current set up by myocardial infarction

tion is probably the strongest current that is initiated by the heart, and this current is strong enough to override any of the secondary ST and T wave changes ordinarily seen. This has recently been stressed and found to be quite valid if you find abnormal ST and T changes in electrocardiograms even though there is bundle branch block. Also if there is an old electrocardiogram any changes in the configuration of the bundle branch block will assume a great deal of importance. I have seen unfortunately four patients in a row admitted to the hospital in shock with pain radiating up to the left shoulder and down the left arm. These patients for all intents and purposes had classical coronary occlusions and they all had amylase determinations up in the range of about 2,000 units. They were very sick people. I wish they had been coronaries. I think they would have done better. This pain could be from pancreatitis; diabetes might, and sometimes is associated with pancreatitis. I do not think it is present, but I do think it needs consideration. The original pain, as Doctor Deere stressed, could have been due to early dissection of an aneurysm equally as well as by an infarct and the fact that the pain was suddenly very severe suggests that also.

About the final episode, I wonder if it is possible, Doctor Deere, that the mass was actually on the right.

DR. GEORGE LIVERMORE: Very definitely it was on the left.

DR. STERN: With the mass on the left and the other findings on the right, I think that Doctor Deere has come to the most reasonable conclusion, which is that this patient did have an early dissecting aneurysm that finally ruptured. Doctor Gillespie's other suggestion put me in mind of something that I unfortunately may know about, knowing that this is Doctor Livermore's case. You apparently have had such a case Doctor Gillespie, and I know Doctor Livermore has had a similar case, also there was a famous case in Washington of someone who had a heart attack and was put on anticoagulants and ended up with ileitis. We do not know what kind of ileitis it was, but our case here may turn out to be the

same type of lesion. I don't know how to explain the mass on the left.

DR. DOWLING:—Are there any other opinions?

DR. ROBERT MCBURNEY: Wouldn't you expect to find some variation in the peripheral pulsation? I think most aortic aneurysms usually produce some occlusion of the iliac or similar vessels.

DR. DOWLING: I think so and I would think you might expect to find something in the urine too from involvement of the renal vessels if the aneurysm had encroached upon either of them. Also it seems to me, with the dissection in the aorta of this magnitude you would have expected a little more vascular collapse than this woman seems to have had. I think there are some other interesting points here that warrant a discussion. For example, in an individual of this age does the absence of a temperature elevation rule out an inflammatory process necessarily in the abdomen? Doctor Dunavant, I see you shaking your head.

DR. DAVID DUNAVANT: I have nothing to change or add to the diagnosis except that certainly in this age group the patient's white count or temperature in no way rules out appendicitis. There was one thing that I was wondering about that has not been discussed; that is, the possible pelvic disease in this sixty-five year old woman was more or less passed over because she was postmenopausal. I am sure that inflammatory disease in the pelvis is rare in a postmenopausal woman, but we have seen recently an eighteen year postmenopausal woman with severe salpingitis and pelvic abscess with peritonitis. Even though it is rare, I think that it is still a diagnosis to be entertained. I am like Doctor McBurney, I wanted to ask if the quotation on the record, "the rest of the examination was not remarkable," meant that the pulses, blood pressure and legs were normal. It certainly would be of benefit to know the answers. I think that the normal peristalsis and the normal function of the bowels would rule out an intra-intestinal lesion unless it is in a retroperitoneal portion of the bowel. I think that this is a pelvic or retroperitoneal lesion, probably of vascular ori-

gin, but I do not see how an inflammatory lesion can be ruled out.

DR. DAVID SCHEINBERG: I just want to add that not all cases of abdominal aneurysm necessarily interfere with the circulation to the legs prior to the onset of the rupture. Therefore, the absence or presence of peripheral pulses in the lower extremities does not rule out the diagnosis made by Doctor Deere.

DR. DOWLING: Shall we have the pathological report, which will be given by Doctor Bale.

DR. GEORGE F. BALE: Perhaps it would be wiser to have the surgeon give his operative findings first.

DR. LIVERMORE: Well, unlike Doctor Gillespie, I was that unfortunate surgeon who was asked to see this patient, and I want to thank Doctor Dunavant for his kind remarks to the effect that he thought inflammatory disease could certainly not be excluded. Vascular disease did not cross my mind or that of the attending internist in this hypertensive woman with a poor cardiac reserve because she came in with no evidence of vascular collapse. There was nothing that suggested she had undergone any sudden catastrophe. She had been sick about four days, and at the beginning the internist thought that this lady might have a mild appendicitis. In view of her cardiac status he felt she could be watched for a while, however, after a few days he admitted her to the hospital. Her anticoagulant had been stopped a day or two prior to her admission. This illness had been going on for about four days and was not typical of appendicitis, but certainly it was the diagnosis that was foremost in the minds of the two of us who saw her. The abdominal mass was thought to be the fundus of the uterus. It was only slightly tender, not very movable and not thought to be of inflammatory origin because most of the tenderness was not associated with the mass. By pelvic examination the tenderness seemed to be high and on the right. The abdominal findings were nowhere near as well localized. Her diabetes seemed to be fairly well controlled although she had some acetoneuria and glycosuria when she was admitted. She came in at 1:00 a.m.

and I saw her the latter part of that morning and then again late that afternoon. Her symptoms were progressive and she was feeling worse. At no time had she had any obstructive symptoms and at no time had she had anything to suggest gastrointestinal bleeding in that she did not pass any blood by rectum. She was not in shock. We overlooked the significance perhaps of her low hemoglobin. When she was taken to surgery our diagnosis was acute appendicitis or possibly a perforated diverticulitis. She was opened with a rectus incision and found to have free blood in the peritoneal cavity. Exploration of the pelvis revealed a leiomyoma of the uterus about three times normal size and the appendix was normal. There was an area of bowel, perhaps 50 to 60 cm. long, that was hemorrhagic throughout. A pathologist, Doctor Trumbull, and we also wondered whether this was of inflammatory vascular origin. The vessels of the mesentery were pulsating and there was some hemorrhage in the adjacent mesentery. It did not look like ileitis nor do I believe it did to Doctor Trumbull. However, it was his feeling that the bowel was probably devitalized by this hemorrhage into its wall to such an extent that resection was indicated, and this is what we did. We removed this segment of the bowel and did an end to end anastomosis. The patient had an uneventful recovery and has continued to do well since then.

DOCTOR BALE: The specimen we received was the segment of bowel just mentioned. Grossly and microscopically it contained diffuse hemorrhage throughout its wall extending from a largely intact mucosal surface to the serosa and into the adjacent mesentery. The bowel had a very dark red color and the serosal surface was relatively smooth. There was no significant associated inflammation. The arteries in the mesentery showed very little arteriosclerosis and no occlusion. Likewise, the veins were not occluded. In summary, we found a segment of small intestine probably devitalized by a massive diffuse hemorrhage due to no apparent anatomical cause.

In considering the cause of this hemorrhage, we can exclude those due to vascular occlusive disease by either the surgeon's

findings or the direct examination of the specimen. The history and anatomical findings seem to exclude a traumatic etiology. Having eliminated these sources as possible causes of the hemorrhage one must turn to defects in the capillary bed or in the clotting mechanism of blood. The former probably can be excluded by the absence of any history of inadequate diet or prior spontaneous hemorrhages. Clotting defects may be congenital, acquired or induced. Bleeding due to either of the first two of these is more likely to have manifested itself on prior oc-

casions. Add to this the known history of long term anticoagulant therapy, and we arrive at the distinct probability that this induced disturbance in the clotting mechanism is the most probable cause of this vascular accident. This is our interpretation for the cause of this lesion.

DR. DOWLING: One point worth adding is that these people on anticoagulants get complications even though the prothrombin time is often not unduly prolonged and may be in the two or three times normal range, where most of us like to keep it.

Surgical Approaches to the Vertebral Bodies in the Cervical and Lumbar Regions: Wayne O. Southwick, M.D., and Robert A. Robinson, M.D. *The Journal of Bone and Joint Surgery*, 39-A: 631, June, 1957.

The bodies of the upper two or three cervical vertebrae may be approached through the mouth and pharynx, with the patient under oral endotracheal intubation anesthesia. A mid line longitudinal incision is made and the vertebrae promptly encountered. The mid pharynx is relatively avascular. It is recommended that the bodies of the third cervical to the first thoracic vertebrae be approached through a transverse incision made at the level of the cricoid cartilage, the platysma being cut in line with the skin incision. The pretracheal fascia is incised longitudinally, slightly lateral to the mid line and medial to the carotid sheath. The trachea and esophagus and thyroid are retracted medially and the carotid sheath retracted laterally and a longitudinal incision is then made over the prevertebral fascia of the vertebral bodies, exposing the anterior longitudinal ligament. When this ligament is opened, the bodies are visible and the indicated operative procedure may be completed.

Lumbar vertebrae may be exposed through an incision starting over the outer one-half of the twelfth rib, carried obliquely downward and forward in the direction of the fibers of the external oblique muscle to the lateral edge of the rectus abdominis. By removing the twelfth rib, exposure of the first lumbar vertebra is facilitated. The internal oblique and transversalis are cut across their fibers in the same plane as the skin incision. The peritoneum may be retracted medially and the vertebral bodies are readily palpated from the twelfth thoracic through the fifth lumbar vertebrae. Great care must be exerted to avoid injury to the vena cava on the right and to the aorta on the left.

Lumbar vertebrae may also be approached through an incision made at the lateral edge of the erector spinae mass with the erector spinae then retracted medially. The fascia anterior to the sacrospinalis muscle may be followed medially and is found attached to the transverse processes. By osteotomizing the transverse process and retracting it laterally, the vertebral body may then be brought into view, and the indicated procedure completed. (Abstracted by Thomas F. Parrish, M.D.)

President's Letter



J. PAUL BAIRD

For the past six years the American Medical Education Foundation has been able to more than double the amount of funds transferred from it to medical schools of the United States. Since its inception in 1951, sponsored

by the American Medical Association, voluntary contributions have increased the funds of the Foundation to such a degree that it has now become an effective agent, and we all should support it generously.

Most members of the profession and a large segment of the general public have been made aware of income problems of our medical schools with decreased income from endowments and inflated costs of all facilities required for teaching.

In order to combat the idea that Federal subsidy would be required, our National Association assumed the leadership in attacking the problem in the typical American way. Working with leaders in the Educational and Industrial fields, private financial support was sought through the creation of two organizations. The National Fund for Medical Education was chartered by Congress to seek support for medical schools from business and industry. The American Medical Education Foundation was established by the American Medical Association to raise funds from the medical profession. We must demonstrate our interest and show a high percentage of participation from the profession, if we expect business and industrial organizations to support the National Fund for Medical Education with voluntary contributions.

Every year these funds are pooled and distributed in the form of unrestricted grants. Through December 1956 the three medical schools in Tennessee have received a total of more than \$387,000. But Tennessee physicians have been slow in getting started with the contributions to such a worthy cause. Regardless of your school,

your tuition represents only one-fourth to one-fifth of the cost of your medical training, and though you may realize this and support your alumni fund, I hope that 1957 will bring some contribution on your part to the American Medical Education Foundation. It is tax deductible and if you so desire, you may designate on your check the medical school you wish to support.

Of all of the various agencies which solicit funds from physicians for worthy purposes, this is one of the few which has no administrative costs as this is borne by the American Medical Association. If your dollar is to go where you intend it with 100 cents to be spent where you want it, this should appeal to physicians in Tennessee to contribute to this fund.

Some states have followed the pattern of Illinois and Utah in passing a dues increase to support the Foundation but I do not wish to see this measure adopted in this State. I prefer to see how much we can accomplish by further publicizing the importance of the Foundation and organizing better to secure greater membership participation in Tennessee.

At the meeting of the Board of Trustees this fall it is my intention to appoint a state chairman to coordinate the efforts of local officers of all component societies to secure the greatest possible participation in securing contributions to this fund. The Tennessee State Medical Association which has many "firsts" in the field of medical progress and public relations, should not be among the "lasts" in the States in percentage of membership participation supporting the American Medical Education Foundation. Contributions to this fund may be made to American Medical Education Foundation and turned over to your District Chairman, County Society Secretary or forwarded to the State Medical Association headquarters.

Paul Baird

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AUGUST, 1957

EDITORIAL

CHANGING TRENDS IN HEALTH INSURANCE

It is needless to emphasize the remarkable growth of health insurance in recent years, since it is common knowledge that it has expanded to cover many millions of persons.

The indemnity type of coverage has brought out little criticism, for the doctor has not had a limit placed on his fee. Therefore this form of health insurance has not been a favorite for lower income groups. At times patients may ponder if indemnity insurance is not a liability rather than an asset when the doctor makes out his bill.

On the other hand, Service Benefits, which actually represent *full payment*, have found great favor among those of lower income, and among labor groups and employers where this type of insurance commonly makes up part of the fringe benefits in labor contracts. However, this form of coverage is becoming more and more displeasing to

doctors in certain quarters for several reasons. These are in the main fixed fees, the payment of fees by a third party, and at times the holding of overlapping or multiple policies by a beneficiary.

The case for Service Benefits was summarized by Dr. W. H. Horton.¹ He states that, "Full Payment is the only practical manner in which the traditions of the medical profession can be applied to the practical consideration of the business of running an insuring company." Further that, "Full Payment is primarily for the welfare of the patient whose interest medicine has always been proud to protect." (Long before insurance was born, and always, the traditions of medical ethics have been that the prime interest in the patient has been his welfare whether he has funds or not. Thus, the doctor can, under "full payment," carry out his ethical obligation and still get a "half-loaf [actually much more than a "half-loaf"] through fees set by the profession. He gets the cash without the expense of repeatedly billing the patient unwilling or unable to pay.) Lastly, "Full Payment is the only means by which medicine in the long picture can be maintained as a voluntary profession." (The author feels that the day of variable fees is past. The people will have good medical care and, if it is to be without a controlled or subsidized medical profession, it will need be by insurance which implies fixed fees.)

Insurance to cover "major medical expense" has been discussed in the past on these pages. Recently the Director of Health Insurance² of the Life Insurance Association re-emphasized some of the attributes of this form of insurance. In doing so he said, "Practitioners should recognize the fact that insurance does not increase the ability of the patient to pay. The entire insured population is merely using its total existing capacity to pay to balance out among themselves the hills and valleys of medical care

¹Horton, William H.: The Basis for Service Benefits, Connecticut S.M.J. 19:898, 1955.

²Andrews, James Jr., Director of Health Insurance of the Life Insurance Association, and Vice-Chairman of the Health Insurance Council, before the Ohio State Surgical Association, Columbus, Ohio, May 13, 1957.

expenses. If the doctor raises his fees because of the presence of insurance, he may well defeat the entire insurance process."

He pointed out it is the "uncertainty" of the cost of medical care more than the cost itself which may worry the public. He cited the recommendation of the California Medical Association that doctors post their fee schedules in their office. (This has been recommended by other state associations in the past.) Furthermore, under the relative scale of fee schedules used in the California plan, each doctor may use his own dollar standard but will have a scale relatively the same as every other doctor. He feels that doctor's fees will not be determined by the presence of insurance but rather by the economic state of the patient and the skill or specialty of the doctor providing the medical care.

With such a philosophy a strong argument may be made for *major medical expense* with a deductible feature and co-insurance clause. It is estimated that the average family can anticipate a hundred dollars, more or less, annually. Deductible insurance permits a great reduction in overhead for the carrier in not needing to process the smaller items.

Major medical insurance would provide benefits up to \$5,000 to \$10,000, protesting against all types of medical expense, in and out of the hospital, including drugs and special nursing care, with deduction for the small claims. With the co-insurance clause the company pays 75 per cent or more of the expenses.

This type of insurance has not appealed to labor or employers in labor contracts, these being used to the terms of total coverage. Nevertheless it is said that the number of major medical expense policies have reached the ten-million mark.

Here then one sees changing trends, growing dissatisfaction for full in-hospital coverage, and the growth of a new and more sensible type of protection,—deductible insurance. After all, it is not the doctor's in-hospital expense which may be the major burden but rather the attendant costs, whether in or outside the hospital. This type of insurance permits case studies outside the hospital if the total annual bill ex-

ceeds the deductible portion. It permits greater freedom to the doctor in regard to his fees.

The public and the profession may anticipate changes in the picture of health insurance in the coming years,—and probably for the better.

R. H. K.

THERAPY OF PROSTATIC CANCER

In 1954 prostatic cancer caused 13,218 deaths in the United States and it is the cause of death in about 5% of men over 50 years of age. Although the rising total of deaths from prostatic cancer reported each year is in part ascribable to an aging population, age-adjusted incidence rates suggest that there may be a striking increase in incidence as well. The relatively common occurrence of prostatic cancer, the frequency with which it is inoperable and the simplicity and success of palliative endocrine treatment combine to make the hormonal control of prostatic cancer a common and an important therapeutic procedure.

Carcinoma of the prostate may be divided into 4 clinical stages.

Stage I is the clinically latent stage in which neither symptoms, signs nor laboratory studies short of actual pathologic examination lead to suspicion of the presence of cancer. Microscopic study of prostatic tissue reveals the presence of previously unsuspected cancer.

Stage II is the clinically manifest early stage in which symptoms are lacking but digital rectal examination of a more or less circumscribed area of induration apparently confined within the limits of the prostatic capsule suggests cancer. There is no evidence of metastases in this stage.

Stage III is the clinically manifest locally advanced cancer without evidence of distant metastases. This is the stage in which local symptoms are present and digital rectal examination discloses a variable degree of induration of the prostate, seminal vesicles and bladder, but evidence of metastases cannot be demonstrated.

Stage IV is the clinically manifest advanced cancer of the prostate with distant metastases.

Although little is known regarding the natural history of the disease, it is thought that the interval between the time of onset of latent prostatic cancer and the appearance of a clinically manifest lesion is about 20 years. No information is available regarding the duration of life in patients with untreated Stage II prostatic cancer. The duration of survival from diagnosis to death in patients with untreated Stage III lesions probably averages between 2 and 3 years. Patients with untreated Stage IV lesions probably survive between 1 and 2 years.

The general aim of treatment is to prolong life with comfort when possible and, at the least, to provide comfort if life cannot be prolonged. Since all forms of therapy carry some risk to life, to comfort or commonly to both, the risk of the therapy proposed in any particular situation should be less than the risk of the cancer in that particular situation. The major therapeutic choices in the patient with prostatic cancer are 3: (1) Non-treatment, (2) Surgical excision, (3) Endocrine therapy. Of these major therapeutic alternatives only surgical excision is potentially curative. The programs of nontreatment and of endocrine therapy are palliative only. Therefore the initial decision must determine whether therapy is to be aimed at cure or at palliation.

Since most patients with Stage I prostatic cancer are not diagnosed, most of them receive a "non-treatment" method of therapy. There is a suggestion that the period of latency varies from 10 to 20 years although a few patients ultimately develop "occult" carcinoma destroying the patient with metastatic disease before the primary tumor becomes clinically manifest. Most authors, however, feel that the survival rate for 5 years in patients with Stage I cancer is about 75%. Since in this age group the life expectancy is about 75% it is apparent that 75% would be the maximal attainable 5-year survival rate even if no patient died of cancer.

Greene and Simon¹ reported a 5-year survival rate of 67% in 39 patients with latent

prostatic cancer discovered by transurethral resection who were treated with diethylstilbestrol.

Since the reported 5-year survivals following non-treatment or endocrine therapy are excellent, an aggressive attitude toward either the diagnosis or treatment of latent prostatic cancer is difficult to justify except as a clinical experiment. For the patient whose life expectancy apparently exceeds 10 years detection of a latent prostatic cancer may justify the consideration of surgical excision but any tendency toward therapeutic aggressiveness should be surbed by recollection of our ignorance not only of the natural history of the disease but of the results of the alternative methods of therapy.

In consideration of Stage II prostatic cancer much more care must be given not only to the recognition of this disease but also to the proper form of therapy. A program of non-treatment is difficult to evaluate because there is no information concerning the temporal natural history of untreated lesions of this stage.

Radical peroneal prostatectomy is the only surgical procedure for which significant survival data are currently available. Following this procedure 61% and 37% survival rates for 5 years and 10 years respectively have been reported for patients with Stage II lesions. No information of statistical value is available concerning the more radical surgical procedures.

Endocrine therapy in the management of Stage II lesions either in the form of estrogens, orchiectomy or both provides a 53% 5-year and 22% 10-year survival rate. It would seem best to advise radical prostatectomy if the patient's life expectancy exceeds 5 years. If it does not exceed 5 years, either non-treatment or endocrine treatment is advisable and since no advantage has been demonstrated for initiation of endocrine therapy as soon as the diagnosis is made and since such therapy is palliative, it should be reserved logically until symptoms demand its initiation.

Since Stage III cancers cause local manifestations sufficient to demand therapy and since the 5-year survival rate is only 10% for patients with untreated Stage III lesions,

¹Occult Carcinoma of the Prostate. Clinical and Therapeutic Study of 83 Cases. Greene, L. F. and Simon, H. B. J.A.M.A. 158:1494-1498. 1955.

non-treatment can be dismissed as a method of therapy.

Experience with various surgical procedures generally indicates the futility of this type of therapy with Stage III prostatic cancers. It would seem that the only justification for radical surgery in this group would be the young patient with an "early" Stage III lesion.

Treatment of this type of prostatic cancer with endocrines results in improvement in the 5-year survival rate. In such patients 29% survived with estrogen therapy, 31% survived with orchiectomy and 43% survived with the combination of estrogen therapy and orchiectomy. The usual method of management is to perform castration first and then resort to estrogens (ethniyl estradiol 1mg daily) when and if castration relapse occurs. Operations for bladder neck obstruction are sometimes necessary but are postponed if at all possible. If surgical intervention is necessary, the implantation of radon seeds or other radioactive material may be attempted. When all else has failed, cortisone may be tried but its usefulness is much greater in those with metastatic bone pain rather than in those with massive local disease.

The treatment of patients with Stage IV cancer requires endocrine therapy since non-treatment and surgical excision are out of the question. It has been reported that there is a 10% 5-year survival in patients treated with estrogen alone, 21% survival from orchiectomy alone and 20% survival from the combination of estrogen and castration. Occasionally x-ray therapy or neurosurgical procedures for the relief of pain and for decompression of the spinal cord are desirable. As in Stage III cancers the first therapy advocated is castration. When relapse occurs, a trial on estrogen is begun. When estrogen failure is apparent the choice rests between radiation therapy and cortisone. If the pain is localized and severe, radiation therapy is given. If the pain is or becomes generalized, cortisone may be tried with doses of 200 mg. a day gradually adjusting the dosage to lower levels. Adrenalectomy and hypophysectomy must still be regarded as experimental methods of therapy.

It would seem best in determining the proper method of therapy to ponder the words of Whitmore:² "That the natural history of prostatic cancer is poorly defined has already been demonstrated; that the natural history of the host is difficult to define is evident from everyday clinical experience. Doing what one believes to be right provides the moral justification for therapeutic excursions into the valley between these two mountains of ignorance, and what one believes right may, depending upon the circumstances, vary from virtual therapeutic nihilism at one extreme to the most radical therapeutic efforts at the other."

A. B. S.

SPECIAL ITEM

Inter-Professional Code

Preamble

Acknowledging that lawyers and physicians are each members of a profession dedicated to the public interest and concerned with the problems of persons in need of the combined services of the two professions, and in order to create a better understanding and closer relationship between the legal and medical professions to the end that each may better serve the other and the public, we the members of the Tennessee Bar Association and the Tennessee State Medical Association, do hereby adopt the following Declaration of Principles as standards of proper conduct for lawyers and physicians in their inter-professional relations.

Inter-Relationship

The medical profession is primarily concerned with the diagnosis, treatment and cure of the patient. The legal profession is primarily concerned with preservation and protection of the rights of the client.

It is for the physician to determine the nature, extent and duration of the injury. It is for the lawyer to determine how and under what circumstances such facts are to be appropriately presented.

The physician should not be an advocate.

²Hormone Therapy in Prostatic Cancer. Whitmore, W. F., Jr. Am. J. of Med. 21:697-713, 1956.

He should not undertake to advise the patient as to his legal rights, or undertake to evaluate his claim or cause of action; and by the same token, the lawyer should not undertake to encroach upon the prerogative of the physician in the care and treatment of the patient.

There should at all times be complete cooperation between the physician and the lawyer, each assuming his proper responsibility, and recognizing that each profession has the duty to develop an enlightened and tolerant understanding of the other.

Preliminary Conference

It is the duty of each profession to present fairly and adequately the medical questions involved in controversies. To that end, preliminary conferences between the attending or examining physician and the lawyer should be arranged in advance of trial, at which time a full and frank discussion of the medical and legal issues can be had. It is recognized as grossly unfair to the physician, the lawyer, and the patient-client to undertake to offer medical testimony without the advantage of such preliminary conferences. The physician may charge a reasonable fee for the time spent in these conferences.

Records and Reports

(1) The patient or his lawyer, as his duly authorized agent, shall be entitled, upon written authorization of the patient, to a prompt report from the attending physician or surgeon concerning the history, examination, findings, diagnosis, treatment rendered or recommended, and prognosis, irrespective of whether or not a third party or agency is made responsible for medical care and compensation to the patient, or whether or not an insurance carrier or third party has contracted to assume financial responsibility for the patient's care or a portion thereof; provided, however, this action is not specifically prohibited by law.

(2) If a medical examination is arranged by a party adverse to the individual being examined, the report of such examination shall be made directly to the person arranging for such examination, and copies thereof shall be furnished to the lawyer for patient upon request of patient. If copies

of said report are to be furnished to the patient or the opposing lawyer this shall be determined, if possible, before the examination, and the physician shall be so advised to whom he shall furnish copies of the report.

(3) The physician shall be entitled to charge a reasonable fee for the preparation of detailed reports requiring an analysis or study of his record, or the examination of hospital or clinical records, but in the absence of unusual circumstances, interim or progress reports or simple reports in the nature of a proof of loss, shall be made available without charge.

Expert Witness Fee

A reasonable expert witness fee is a proper and necessary item of expense in litigation involving medical questions, and payment thereof shall ultimately be made by the client; but, in every instance in which the lawyer makes arrangements for expert testimony, it shall be the obligation of such lawyer to see that adequate arrangements are made for the payment by the client of such expert witness fee, provided, however, this shall not be construed as creating a personal obligation on the part of the lawyer.

Court Attendance

(1) Lawyers should make such advance arrangements for the attendance of physicians as witnesses as will have due regard for the professional demands upon the physicians' time. Such advance arrangements contemplate notice to the physician of the intention to call him as a witness prior to the issuance of the subpoena and calling the physician by telephone after the trial has commenced to inform him of the approximate time when he will be called to testify. If the case is continued, settled, or otherwise disposed of, and the attendance of the physician will not be required, the lawyer shall see that the physician is promptly notified so he may rearrange his appointments.

(2) Attending physicians shall make all reasonable efforts to attend Court as witnesses when their testimony is of vital importance to the proper administration of justice.

(3) When a physician is called to testify

as a witness, either in Court or by deposition, the charge shall be reasonable and generally in keeping with the amount for a comparable time for professional services. Objectionable fees shall be referred to the inter-professional Code Committee.

(4) No arrangements shall be made whereby the amount of the physician's charge for his time as a witness, or for his attendance in Court, shall be contingent upon or be determined by the amount of the recovery by the patient in the litigation.

(5) The lawyer, in disbursing money either after settlement or after judgment has been obtained, shall employ every practicable means to see that the agreed charges of the attending physician and expert witness fees are paid by the client out of such settlement or judgments.

Administration of Code

The Tennessee Bar Association and the Tennessee State Medical Association shall appoint six (6) members from each profession who shall serve on a committee to be known as the "Inter-Professional Code Committee." Two (2) shall serve for a term of one (1) year, two (2) for a term of two (2) years, and two (2) for a term of three (3) years. Thereafter members shall be appointed for a term of three (3) years and said twelve (12) individuals shall constitute the Inter-Professional Code Committee.

Such Committee shall: (a) Promulgate such suggestions as may be necessary to carry into effect the principles hereby adopted; (b) Jointly attempt to mediate and arbitrate any dispute arising between individual physicians and lawyers, or between the two professions, and otherwise implement the Declaration of Principles herein adopted; and (c) Report annually to each of said organizations the work of the Committee during the year and make such recommendations to said organizations as the Committee deems desirable.

(Approved by the Inter-Professional Code Committee on May 9, 1957).

J.E.B.

DEATHS

Dr. Moore Moore, Sr., 80, Memphis, died on June 28 at Methodist Hospital. His death was the result of a cerebral thrombosis.

Dr. John Benjamin McNulty, 78, Memphis, died July 18 at his home after being ill for several months.

Dr. James Manning Brockman, 52, Memphis, died June 17 from a heart attack. He was stricken in his office in the Methodist Hospital.

Dr. John G. Samuels, 47, Union City, died July 14 at his home as a result of a heart attack. He was Vice-President of the Obion County General Hospital Medical Staff.

Dr. Amos Rule Garrison, 78, died June 26 at the Fort Sanders Hospital in Knoxville. He was a resident of the Powell community in Knox County.

Dr. Edgar L. Womack, 86, Manchester, died July 1 at his home.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Knoxville Academy of Medicine

The academy conducted its regular monthly meeting in the headquarters building on July 9. An interesting scientific program was conducted and the speaker was Dr. C. Sanford Carlson whose subject was "Treatment of Fractures in the Aged." The discussion of the paper was led by Dr. Robert Brashear.

Chattanooga-Hamilton County Medical Society

The Society's regular meeting was conducted in the Interstate Building on July 11. An interesting scientific program was presented as follows: "Congenital Bladder Neck Obstruction" by Dr. Dewitt B. James. "Recent Advances in Obstetrics & Gynecology" by Dr. Harold Schwartz. An interesting case report entitled "Portal Hypertension Secondary to Cavernous Hemangioma of Liver" by Dr. Frank B. Graham.

Roane County Medical Society

The regular monthly meeting of the Roane County Medical Society was conducted in the Oak Ridge Hospital. The program consisted of a talk by Dr. Marshall Brucer, Chairman of the Medical Division

ORINS and his subject was "Military Atoms for Peace Program." Dr. Charles C. Congdon spoke on "Bone Marrow Transfusions."

Dr. G. Turner Howard of Knoxville presented a brief talk about the purposes and organization of the World Medical Association.

NATIONAL NEWS

The Month in Washington

The economy drive to the contrary notwithstanding, health spending by the Department of Health, Education, and Welfare for the fiscal year that began this July already is assured of surpassing last year's record by some \$33 million. This assumes, of course, that no further requests will be made by HEW for supplemental funds, a practice common in government for many years.

Research programs were the most favored by legislators, many of whom spoke out against federal spending by other agencies. But when the health budget came up for debate, the economy oratory subsided.

In only one instance was a health program cut back. And to the surprise of many, it occurred in the Senate which traditionally restores budget cuts originating in the House. A sum of \$45 million was voted, instead of the House-approved \$50 million, for grants to states for sewage treatment works construction. But then the Senate wrote in language permitting states to get their maximum allotments a full year after the fiscal year ends.

The Hill-Burton hospital construction program received \$3.8 million less than last year but only because the administration asked for \$121.2 million instead of the \$125 million appropriated last year.

The National Cancer Institute received the largest dollar increase of any health item in the budget. The increment was \$8 million over last year. The administration had asked for \$48.4 million, the House voted \$46.9 million, and the Senate raised this to \$58.5. It was finally compromised at \$56.4 million.

Congress obviously agreed with the views expressed by the Senate Appropriations Committee: "... the committee is fully aware that it is providing funds for cancer research, the outcome of which is unknown. On the judgement of those who are scientifically most competent, the committee is fully willing to risk the investment on the ground that the chance of a big payoff is a reasonable one. Such risks are inherent in research."

The Institute of Arthritis and Metabolic Diseases fared well, too, getting a total of \$20,385,000 compared with last year's \$17,885,000. And the Senate Committee charged the institute with taking

leadership in research on effects of radiation on the human organism.

The Mental Health Institute's spending has been going steadily upward, and this year it was given another boost with a final appropriation of \$39,217,000, an increase of about \$4 million. Other research totals for the current year: National Heart Institute, \$35,936,000; Neurology and Blindness Institute, \$21,387,000; Allergy and Infectious Disease Institute, \$17,400,000.

On only one score did the research advocates lose out. The House view prevailed in conference on the setting of a 15% ceiling on additional overhead costs allowed schools and other institutions getting federal grants. This question which drew considerable attention in hearings is likely to be reopened. Congress wants a General Accounting Office study by the end of this year.

In voting a \$5 million increase (to \$22,592,000) for general public health assistance to the states, Congress was reaffirming its support of helping local health departments increase their professional staffs and broaden their services. The Senate Committee report contained this significant language:

"... with a population increase of more than 20 million during the past decade, there are no more organized health departments than there were 10 years ago. This means that 18 million people are living in areas with no full-time organized community health services, and millions more live in areas where such services are only fragmentary."

A few days later, the Public Health Service announced plans for a broad survey of rural health needs, particularly in sparsely settled areas. It picked for its first study Kit Carson County, Colo., an area known for its scattered farm population, low income level and adverse climatic conditions.

AMA Challenges Claim of High Civilian Medicare Costs

Claims of military officials to the House Appropriations Committee that care of dependents in military facilities is substantially less costly than in civilian hospitals has been challenged by the American Medical Association in testimony to a Senate Appropriations subcommittee. Witness for the AMA was Dr. Hugh Hussey, a trustee of the association and professor of medicine at Georgetown University.

The issue came to a head when the House Committee, accepting Navy witnesses' information as accurate, recommended the Defense Department require dependents of military personnel to use military hospitals so long as such facilities are deemed adequate by Defense. This elimination of free choice, Dr. Hussey testified, may bring about a major change in the law and may have "undesirable consequences." Accordingly, he urged the Senate committee to write language negating the House Committee recommendation.

At closed House hearings held in April, Navy witnesses made these claims: Cost of dependent care in civilian hospitals is \$50 per day. For purposes of interagency reimbursements, cost of like care in military facilities has been set at an arbitrary \$27.50. As a result of these comparisons, the House Committee, in the interest of economy, decided that more use should be made of military hospitals.

VA Tightens Up on Workmen's Compensation Cases

Veterans Administration has tightened up its policy on hospitalization of non-service connected cases where the veteran is covered by workmen's compensation. The action follows conferences between representatives of the American Medical Association and officials of the VA and other federal agencies. The new policy applies only to treatment (on non-service connected basis) "of an occupational injury or disease incurred in or as the result of employment and (where the veterans are) entitled to necessary medical and hospital treatment elsewhere at no expense to themselves by reason of some form of industrial coverage. . . ."

Dr. Roy A. Wolford, deputy chief medical director for VA, instructs hospital managers to follow this procedure in such cases: 1. Once it has been established the veteran is covered by workmen's compensation, he will be asked to review his oath of "inability to pay" for private treatment and to agree to his transfer to another (non-VA) hospital when his condition permits. 2. If the veteran still refuses to change, he will be informed that this information will be transmitted to VA headquarters in Washington. (VA can refer such cases to the Justice Department for possible prosecution, although the directive does not say that this will be done.)

MEDICAL NEWS IN TENNESSEE

Small Business Administration Will Make Loans to Doctors

Under a recent policy change, the Small Business Administration can now make loans to physicians, surgeons, and others engaged in professional services, according to the Regional Director of SBA, in Atlanta. Previously SBA had not been permitted to make loans to professionals, since these were not considered strictly as small business within the meaning of the Small Business Act.

With the new policy, the agency can make loans for the following purposes: (1) To finance construction, conversion, or ex-

pansion of hospitals, clinics or offices to be used for professional services; (2) to finance the purchase of equipment facilities, supplies, or materials; and (3) to meet other operational needs.

SBA does not make loans where capital is available on reasonable terms from banks or other private lending agencies. Applicants, therefore, are advised to have letters from two banks to the effect that the banks cannot supply the capital as needed. If the local bank cannot make the total loan, it is asked to participate in the loan with SBA. If the bank cannot participate, SBA may then make a loan direct.

To qualify for consideration for either a participation or a direct loan, the applicant must be considered a small business and must meet certain practical credit requirements. Since anyone employing fewer than 250 persons is considered *small*, applicants from the medical profession would not ordinarily be affected by the size provision.

To be eligible for a loan, an applicant must be of good character, have the ability to operate his business successfully, and must have enough capital so that, with loan assistance from SBA, it will be possible for him to operate on a sound financial basis. His past earnings record and future prospects must indicate ability to repay the loan out of income.

The maximum amount of a direct SBA loan, or of SBA's part in a participation loan, is \$250,000.00, with a maturity limit of ten years. The interest rate cannot be more than 6%, and may be less in the case of a participation loan, if the participating bank charges a lower rate.

It is suggested that any member of the medical profession who previously inquired about an SBA loan and was not encouraged to file an application, on the basis that he did not qualify as a "small business," should contact SBA and ask that his application be reconsidered. The regional office of SBA is located at 90 Fairlie Street, N.W., Atlanta 3, Georgia, and there is a branch office for the State of Tennessee located at 732 Falls Building, 22 N. Front Street, Memphis, Tennessee. There is also a sub-office located at 315 Empire Building, 624 Market St., S.W., Knoxville, Tennessee. SBA personnel

at either of these offices will give advice and assistance in the preparation of an application. No appointment is necessary. Copies of applications and a copy of a pamphlet, "SBA Business Loans," may be had from the regional office on written request.

Dependents Medical Care Program (Medicare)

In evaluating the implementation of the Dependents Medical Care Program since its inception, it is apparent that there is a need for greater emphasis to be placed on informing physicians as to the nature of the program and the scope of care which is payable by the government under its provisions. Illustrative of this need is the fact that many physicians are not aware that the program is *primarily a hospitalization program*, and includes limited coverage for outpatient care only. For example, there has been considerable consternation displayed when a claim has been disallowed for a tonsillectomy performed in a clinic, a physician's office, or in an emergency room of a hospital and that patient is not a hospital patient. In this, as in many other cases, the criticism is based upon the misunderstanding of the program.

Every effort has been made to distribute information regarding the program to all physicians. Every effort is being made by the Department of Defense and TSMA to develop an information program to be directed primarily towards physicians to more thoroughly familiarize them with the program.

TSMA Contributes to Hurricane Disaster Clinic Fund

The Tennessee State Medical Association has forwarded a check for \$200 to the Dr. Cecil Clark Clinic Fund, whose total facilities and three members of Dr. Clark's family were destroyed in Cameron, Louisiana, during Hurricane Audrey. In presenting the check from the Tennessee State Medical Association, Dr. J. Paul Baird, President, said: "The Association has no special provisions for cases like this, but we were so moved by the devotion to duty shown by Dr. Clark that we wanted to pitch in and help him to get started again. The Associa-

tion is always deeply gratified to learn of examples of this type of dedicated service on the part of an individual physician. Dr. Clark has dramatized in real life the high standards of service doctors render in times of disaster without thought of personal sacrifice."

University of Tennessee College of Medicine

Attendance at programs offered by the postgraduate department of the University of Tennessee Medical Unit indicates interest of physicians, dentists and other members of health fields in keeping abreast of latest developments in their professions. Since last July, 23 courses have been offered to 483 persons.

Postgraduate programs were offered physicians, dentists, nurses, pharmacists and medical technologists. Eleven courses were attended by 182 Mid-South physicians.



A doctor educator has warned that the University of Tennessee College of Medicine faces critical losses in staff and deterioration of standards unless its income is increased. Statistics from 82 of the nation's 85 medical schools show U-T had an average per student cost of \$1,367—next to the lowest figure in the survey. Average cost for all schools was \$3,967 and ranged as high as \$14,764 at the University of California at Los Angeles.

It was explained that several factors caused the low cost at U-T. The unique four-quarter plan of operation that makes a maximal use of plant, equipment and general administrative personnel is one reason. Another important factor also is the excellent co-operation between the city of Memphis and the medical school which provides clinical teaching facilities at substantially lower costs than many schools enjoy.



Dr. David S. Carroll has been promoted from associate professor to professor in the department of radiology at the University of Tennessee College of Medicine. Nine other promotions were announced. Dr. Horace D. Gray is now associate professor and Dr. Edward H. Mabry is assistant professor in the department of radiology. Dr. Joseph C.

Mobley was named an assistant professor in the division of obstetrics and gynecology.

In the division of medicine, the following promotions were made: Dr. John D. Young to associate professor, and Dr. Paul T. Drenning to instructor. Dr. Robert F. Ackerman, Dr. Howard A. Boone, Dr. Burt Friedman and Dr. Lester Van Middlesworth were promoted to assistant professor.

Dr. C. W. Sheppard, head physicist of Oak Ridge National Laboratories has joined the Division of physiology at the University of Tennessee Medical units as an associate professor. For the past ten years, Dr. Sheppard was head physicist and assistant director of the biology division at Oak Ridge.

Intensive Treatment Center Opens at Central State Hospital

The two-million dollar intensive treatment building of Central State Hospital was recently dedicated in honor of Dr. O. S. Hauk, Superintendent of the institution for the past 20 years.

Purpose of the building, Dr. C. J. Ruilmann, state commissioner of mental health, said, is to house all facilities for intensive patient treatment in an effort to minimize the amount of time necessary for many patients to be institutionalized.

The Nashville intensive treatment building is one of five such units to be opened in dense population areas of the state within the next year and a half.

Heart Research Grant

A total of \$39,834.85, an increase of \$5,000 over last year, was allocated recently for research and service projects by the Middle Tennessee Heart Association. The largest single grant was \$15,392.45 to the laboratory of clinical physiology at Vanderbilt University School of Medicine.

PERSONAL NEWS

Dr. Robert E. Maddox, Kingsport, announces his association with **Dr. Walter E. Scribner** and **Dr. E. Kent Carter** at Kingsport in the practice of radiology and nuclear medicine. The offices will be in the Holston Valley Community Hospital at Kingsport.

Dr. Douglas Collins, Chattanooga, is completing a year as Vice-President of the Chattanooga

Junior Chamber of Commerce and has been elected Secretary for the forthcoming year.

The following physicians have received certificates of fellowship in the American College of Chest Physicians. They are: **Dr. Crawford W. Adams**, Nashville; **Dr. Edward G. Campbell**, Memphis; **Dr. Walter Diveley**, Nashville; **Dr. Mackinnon Ellis**, Mountain Home; **Dr. Robert A. Goodwin**, Nashville; **Dr. W. W. Hubbard**, Nashville; and **Dr. Raphael N. Paul**, Memphis. **Dr. David H. Waterman**, Knoxville, was re-elected Chairman of the Board of Governors of the College.

Dr. Sol A. Rosenblum has opened his office in the Medical Arts Building, Nashville, for the practice of internal medicine.

Dr. Sam W. Carney announced the opening of his office in the Madison Square Clinic, Madison, Tennessee, for the practice of pediatrics.

Dr. Ambrose M. Langa has announced the opening of his office for the practice of surgery at 209 West 8th Street, Columbia.

Dr. Charles M. Hamilton has joined Doctors Carpenter, Fowler, Eyler and Parrish in the practice of Orthopaedic Surgery at 1921 Broadway, Nashville.

Dr. Horace T. Lavelly, Jr. has opened his office in the Medical Arts Building, Nashville for the practice of Gynecology and Surgery.

Dr. Cloyce F. Bradley has moved his office to the Medical Arts Building, Nashville, for the practice of Surgery.

Tennessee physicians certified by the American Board of Obstetrics and Gynecology are: **Dr. George B. Crafton**, Nashville; **Dr. Clarence L. Ruffin**, Johnson City; and **Dr. James L. Seale**, Memphis.

Dr. W. O. Vaughn, Nashville, has been named to the Board of Governors of the Nashville Chamber of Commerce.

Dr. Bryant S. Swindoll, Tullahoma, has been named director of the Coffee and Franklin County Health Department. He succeeds **Dr. Robert E. Merrill**, resigned.

Dr. David Turner, Jasper, has closed his office for the practice of medicine to become a resident at the Henry Grady Memorial Hospital in Atlanta.

Dr. Charles Ray Swift, Chattanooga, has announced the opening of his office for the general practice of medicine in the East Lake community at Chattanooga.

Dr. B. W. Crawford, Camden, announces his association with the Benton Clinic Hospital.

Dr. Donald Connell has announced the opening of his office for the practice of medicine in Halls.

Dr. Parley M. Dings, Clinton, has been named director of the Anderson County Health Department.

Dr. Bland Cannon, Memphis, recently addressed the State Pharmaceutical Association convention.

Dr. Randolph A. Cate, Tullahoma, announces the opening of his office for the practice of medicine at the Queen City Infirmary. He will practice internal medicine.

Dr. Thomas N. Pirkle, has become associated with Dr. Robert A. Burns in the practice of medicine and surgery at Burns Clinic, Blue Ridge.

Dr. Lee S. Smith, Jr., Lebanon, has been named director of the Wilson County Health Department.

Dr. John T. Moore, Sr., Algood, was recently honored at a reception where he autographed first copies of his book, "Dr. Tom."

Dr. R. C. Kash, Lebanon, read a paper entitled "Changing Observations and Concepts in the Management of Heart Disease" at the annual scientific session of the Upper Cumberland Medical Society at Red Boiling Springs.

Dr. M. M. Green, Clarksville, head of the Montgomery County Health Department, described recently the system for indigent patient care to the Kiwanis Club.

Dr. Robert Knight and **Dr. Hugh Smith**, Memphis, orthopedic surgeons, presented a paper recently before the American Orthopedic Association meeting at Hot Springs, Arkansas.

Dr. Joseph B. Killebrew, **Dr. R. B. Donaldson**, **Dr. Warren H. Kimsey**, and **Dr. Foster Hampton**, Chattanooga physicians, recently appeared on the program of the Plaintiff Attorney's Section of the Tennessee Bar Association meeting at Chattanooga.

Dr. James Garrison and **Dr. Paul Estes** have joined the Murfreesboro medical clinic for the practice of medicine.

Dr. Carl Rogers, Shelbyville, is the new president of the Shelbyville Lions Club.

Dr. W. P. Stone, Springfield, has received a certificate of appreciation from the State Selective Service System.

Dr. Luke W. Nabers, Morristown, has attended the International Rotary convention in Lucerne, Switzerland.

Dr. J. Madison Dill, Woodbury, has been elected to the Board of Directors of the Middle Tennessee Heart Association.

Dr. Jack Adams, Chattanooga, recently spoke before the Chattanooga Kiwanis Club.

Chattanooga doctors appearing on the program "Your Doctor Speaking" have been: **Dr. Richard G. Hofmeister**, **Dr. Foster Hampton** and **Dr. Robert J. Boehm**.

BOOK REVIEW

The Changing Patient-Doctor Relationship. By **Martin G. Vorhaus, M.D.** 310 Pages. New York: **Horizon Press, 1957.** Price \$3.95.

In this exceptionally readable book the author makes out a good case for his major premise that the doctor-patient relationship is changing. He attributes the change to the increasing prevalence of anxiety among people, and a greater willingness on their part not only to admit that they have anxieties, but to talk about them. It becomes necessary for the doctor to adapt to the change that has taken place if he is to fulfill the needs of his patients. Dr. Vorhaus observes that

there are patients who are dissatisfied with the kind of treatment they have received at the hands of licensed physicians and many of them turn to "healers." There are also doctors who feel frustrated because some of their patients refuse to heed warnings or follow medical advice. Both instances represent failure of the doctor-patient relationship.

The author presents four of the most common and most difficult medical problems (peptic ulcer, colitis, hypertension and obesity) through exceedingly interesting case histories. These take the form of observations between doctor and patient, and indicate the skill and patience required by the doctor in encouraging the patient to verbalize his difficulties and work with the doctor toward the solution of his problems. The case histories make interesting reading, and are most instructive as well.

Illustrations that are clever and often amusing are provided by Birnbaum, a recognized and able artist. He depicts the doctor as a three-headed creature who is therapist, saint and father to his patient.

Dr. Vorhaus apparently has intended his book for patient and doctor alike. Undoubtedly both will find it entertaining and informative. It seems to this reader that its greatest usefulness may well lie in the orientation and teaching of medical students.

L. D. ZEIDBERG, M.D.

ANNOUNCEMENTS

Licensing Board for the Healing Arts

The following M.D.'s have been licensed to practice in the State of Tennessee by the Licensing Board for the Healing Arts.

Rodolph H. Turcotte, Kingsport
Reginald V. Bennett, Memphis
George A. Riley, Memphis
Jack B. Alperin, Chicago, Illinois
Sue C. Atwood, Memphis
John O. Hardeman, Memphis
Roy W. Williams, Memphis
Thomas M. Wilson, Guthrie, Kentucky
Frederick D. Lansford, Jr., Chattanooga
Norman Traverse, Miami Beach, Florida

American Board of Obstetrics and Gynecology

Applications for certification to the American Board of Obstetrics and Gynecology, Part I, and requests for re-examination Part II, are now being accepted. All candidates are urged to make such application at the earliest possible date. Deadline date for receipt of applications is September 1, 1957. No applications can be accepted after that date.

Current bulletins outlining present requirements may be obtained by writing to the Secretary's office, Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

PLACEMENT SERVICE

The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Department, 112 Louise Ave., Nashville 5, Tenn.

Locations Wanted

A 26 year old single physician, Baptist. Graduate Vanderbilt University. Priority IV. Board eligible in Pediatrics. Desires associate practice in Pediatrics. Available immediately.

LW-249

A 30 year old single physician, Protestant. Graduate University of Louisville. Priority IV. Completing residency in general practice. Desires general practice, clinical or industrial, in community 5,000-50,000. Available August 1, 1957.

LW-256

A 31 year old married physician, Church of Christ. Graduate University of Tennessee. Priority IV. Desires private or clinical practice in general surgery in community over 10,000. Available immediately.

LW-257

A 28 year old married physician, Presbyterian. Graduate of Cornell University. Completing military obligation. Desires general practice in community of 10,000. Available August, 1957.

LW-258

A 26 year old married physician, Methodist. Graduate University of Tennessee. Currently on duty as Naval doctor. Prefers general practice in community of 1,000 or more. Available immediately.

LW-262

A 29 year old married physician, Methodist. Graduate Vanderbilt University. Priority IV. Currently resident in Pediatrics. Desires clinical, assistant or associate practice in Pediatrics in Nashville vicinity. Available immediately.

LW-264

A 36 year old married physician, Baptist. Graduate of University of Illinois. Certified American Board of Surgery. Desires clinical or associate practice in general surgery. Available November, 1957.

LW-265

A 30 year old married physician. Graduate Temple University. Priority IV. Desires practice in Internal Medicine. Has experience in Cardiology. Desires community of 50,000 to 750,000. Available immediately.

LW-267

A 28 year old married physician, Presbyterian. Graduate of University of Tennessee. Priority IV. Desires general practice in community with equipment available. Available now.

LW-268

A 28 year old married physician, Methodist. Graduate of Medical College of Georgia. Completes service in October, 1957. General practice and surgery in community of 5,000-30,000. Available October, 1957.

LW-269

A 28 year old married physician, Methodist. Graduate of University of Tennessee. Desires associate or industrial general practice. Available immediately, 1957.

LW-272

A 32 year old married physician, Protestant. Graduate of University of Tennessee. Now on active duty. Desires general practice in community of 10,000 to 20,000. Has several months Ob-Gyn residency. Available upon securing suitable location.

LW-274

A 28 year old single physician, Presbyterian. Graduate of University of Tennessee. Priority IV-A. Desires associate or assistant position in general practice in community of 5,000-50,000. Available October, 1957.

LW-276

Physicians Wanted

Physician in south central Tennessee community of 7,500 desires associate. Office equipment available. Town has 31 bed hospital.

PW-86

Community in mid-central Tennessee needs physician to replace present one who is leaving to enter group practice. New clinic, equipped and available at low rent. Good location.

PW-89

Physician wanted with at least two years experience to enter established practice in Nashville area. Office and equipment are complete.

PW-92

Local position for desirable young physician with administrative ability. An opportunity to do public relations with the medical profession and lay people. Two-year tenure required. Excellent introduction into medical circles.

PW-93

Large company located in Nashville desires assistant medical director with experience in cardiology. Company has 17 bed hospital and fully equipped clinic. Position requires 1 year previous experience.

PW-94

East Tennessee community of 7,000 desires physician to take care of general practice and OB, no surgery. Excellent opportunity for physician looking for desirable location.

PW-95

Community of 1,200 in southern Tennessee desires physician to replace aging doctor. One other physician in community. Office space and some equipment available.

PW-96

Large company in eastern Tennessee desires physician under 35 years of age. Office space and all equipment provided in dispensary. Prefer internal medicine but not required.

PW-97

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Radioactive cobalt delivers the type of radiation provided by super-voltage X-ray therapy. However, it has less of the untoward side effects and herein lies its advantages in selected patients.

COBALT-60 TELETHERAPY*

JOHN H. BEVERIDGE, M.D., Nashville, Tenn.

In 1950 there was one cobalt-60 teletherapy unit in use for the treatment of cancer patients. In June, 1956, there were 120 units in use throughout the world. Of this number 64 were in use in the United States. Since then many more units have been installed and daily a greater number of patients are being treated with cobalt-60 teletherapy.

It is too early to discuss cure rates following treatment of cancer patients with cobalt-60. We thought, however, that it would be timely to discuss with you in this preliminary report some of the questions that may arise in your minds, as non-radiologists, concerning cobalt-60 teletherapy units, the nature of the radiation from these units, and clinical impressions after treating a sizable number of cancer patients with cobalt-60 teletherapy.

The radioactive cobalt-60 as used in therapy is obtained by placing the raw element cobalt-59 in the form of metal discs in an atomic pile where they are bombarded by a stream of neutrons. In this process the nuclei of the atoms of cobalt-59 capture neutrons and by doing so an isotope cobalt-60 is formed. The cobalt-60 isotope is in a state of excitement or is unstable due to an imbalance between the neutrons and the protons of its atoms. In order to reach a state of stability excess energy is given off. This is in the form of beta particles and gamma rays. Thus, the isotope cobalt-60 is radioactive. The process by which this radioactive energy is given off is known as radioactive decay. The time it takes for cobalt-60 to decay to one-half strength is 5.3

years. This time is called the half-life. In 5.3 years the treatment time to obtain 100r would be twice as long but the quality of the radiation would be the same. We may state this in another way and say that in one year the radioactivity remaining is 87.7 per cent, in five years 52 per cent, and in ten years 27 per cent. Also, it should be remembered that the quality of the radiation from cobalt-60 treatment units containing different amounts of radioactive material is the same. Different treatment times will be necessary to deliver equal doses but the effect upon the tissues treated with units containing different amounts of cobalt will be identical when like doses are delivered.

After cobalt has been activated in an atomic pile the small metal discs are loaded by remote control into the treatment head of therapy units which are so constructed and designed as to reduce leakage or stray radiation to a safe level when the machine is in the "off" position.

With the machine in the "on" position the radioactive cobalt is brought by remote motor control to be superimposed over an opening or port in the outer thick protective shell. This allows a beam of radiation to pass to the outside where it may be used for treatment. The shape of the beam used for therapy is controlled by different sized cones or by a collimator at the port of exit.

When the cobalt-60 source of radioactivity is used at a distance from the patient for treatment we speak of this as teletherapy. In actual practice treatment distances usually vary from 30 to 100 cm. At times shorter distances may be used, however, and at distances of less than 20 cm. the depth

*Read before the meeting of the Tennessee State Medical Association, April, 1957, Nashville, Tenn.

dose equals approximately that of a 250K.V. X-ray machine. The room in which a cobalt-60 therapy unit is installed must be properly shielded in all directions so that when the machine is in use direct and scattered radiation outside will be reduced to a maximal safe level.

The cost of the machine and complete installation varies from \$20,000 to \$100,000 with an average cost of \$50,000.

As stated previously cobalt-60 decays or disintegrates by emitting beta particles with an average energy of 0.3 Mev. and gamma rays with energies of 1.1 Mev. and 1.3 Mev. The beta particles are easily stopped by a thin metal sheet. Thus, it is seen that the radiation from cobalt-60 used for therapy is the gamma ray with energy equivalent to 1 to 3 Mev. X-ray machines. Energy of this magnitude as used in radiation therapy is supervoltage therapy. Radiation produced by machines generated with voltages from 180 K.V. to 400 K.V. are referred to as medium volt radiation; those between 500 K.V. and 3000 K.V. as supervoltage radiation and those produced by voltage in the range around 20 to 30 million volts, as with the betatron, are called megavolt radiations.

All of these different types of X-ray machines as well as cobalt-60 are calibrated so that the output is known. The output is expressed in roentgens per minute. The output per minute does not effect the quality of radiation. It does, however, influence the treatment time.

As one goes from the lower voltages to the higher voltages the rays become harder. That is, frequency of the waves of energy becomes greater and the wave length shorter. This gives more penetrating radiation and radiation which scatters more in a forward direction as it penetrates tissue. With medium voltage radiation, as produced by a 250 K.V. X-ray machine, the maximum dose is on the skin as the entrance dose is added onto by back-scatter from the underlying tissues. The depth dose is less than with supervoltage radiation. It is more difficult to deliver an adequate tumor dose deep within the tissues of the body unless more ports are used and even then the skin tolerance of these ports would show severe reaction and may in certain instances be ex-

ceeded without an adequate tumor dose. Many ports make treatment technics and dosage determinations difficult. When many ports are used there is also a greater chance that some tumor-bearing tissue will be outside of the useful beam and therefore be undertreated. With medium voltage therapy side scatter outside of the volume of tissue through which the beam is passing is greater, thus a larger volume of normal tissue is irradiated. This decreased the patients tolerance to treatment and there is more systemic reaction.

With cobalt-60 the maximum dose is 4 to 5 mm. beneath the skin and not on the skin surface. Thus, severe skin reactions are not seen and in most cases there is little or no skin reaction. The depth dose with cobalt-60 is better. These factors allow us to treat through fewer ports and in many cases one to three ports are all that are necessary to deliver an adequate tumor dose to deep tissues without exceeding the limits of tolerance of normal tissues. Cobalt-60 dosage determinations are easier as there is less cross-firing of the beams of radiation. When fewer ports are used treatment plans and technics are simpler to carry out. The lateral scattering outside of the volume of tissue in the geometrical beam is less. This accounts for better constitutional tolerance to treatment with cobalt-60.

The one great caution to be observed with cobalt-60 treatments is accurate determination of dosage. With medium voltage radiation the skin reaction serves as a warning and rarely are underlying normal tissues over-irradiated if skin tolerance is not exceeded. With cobalt-60, this warning sign is not present. Years of experience with different wave lengths of radiation by many workers in the treatment of patients has fairly well established the limits of tolerance of the normal tissues of the body to radiation. These limits must not be exceeded. In some cases what we consider to be a cancerocidal dose cannot be delivered because the tumor is so situated that the normal tissue tolerance about the tumor would be exceeded and there would be a great possibility of irreparable damage. It must be remembered, however, in planning treatment and in the selection of patients

that there is a certain calculated risk when one is attempting to cure a patient with cancer. In spite of every precaution and skillful attention to recognized limitations, the unexpected or unusual may at times happen and there will be a complication. Being over cautious could also lead to repeated "under treatment" of patients with cancer and no cures.

Another advantage of cobalt-60 radiation over the medium volt range is the decreased absorption of energy by bone. With cobalt-60 the energy absorbed by bone is almost identical to that absorbed by the surrounding tissues. This is of great importance when large doses are directed through bone, as in the treatment of lesions of the head and neck, and is one of the critical advantages of supervoltage over medium voltage radiation in the treatment of tumors in the oval cavity, nasopharynx and sinuses. The risk of bone necrosis is markedly reduced and is in fact unusual even when cancerocidal doses are directed through bone by the use of one port only.

Another fundamental point which should be made clear is that similar doses of radiation produced by different voltages have in general the same biologic effect upon cancer cells. The effect is proportional to the dose delivered to the cells. All radiations, whether produced by low voltage, medium voltage or from cobalt-60, transfer their energy to tissue by a process of ionization. These radiations are known as ionizing radiations. Ionization in turn causes chemical and biologic changes in tissues. Cancer cells are no more sensitive to cobalt-60 radiation than to medium volt radiation when the dose to the cells is the same. It may be easier to deliver a high dose with cobalt-60 but so long as tumor doses are the same the biologic response is the same.

For years radiologists have classified tumors into certain groups as to their radiosensitivity. Lymphosarcoma, for example, is a highly radiosensitive tumor. It shows the same response to 250 K.V. X-rays as to cobalt-60 when like doses are applied. Carcinoma of the stomach, melanosarcoma, meningioma and myosarcoma are examples of radioresistant tumors. These tumors are

no more sensitive to cobalt-60 teletherapy than to 250 K.V. X-rays when equal doses are given. A highly sensitive tumor such as lymphosarcoma is not radiocurable with X-rays when spread throughout the body. It is no more radiocurable with cobalt-60 simply because of the natural history of the disease. The above discussion should serve to show that there is nothing unique or different possessed by, or associated with cobalt-60 radiation whereby tumor cells are made more sensitive and cancers "melt away" more quickly.

In our own practice of radiation therapy, we treat approximately 65 to 75 per cent of our deep therapy patients with cobalt-60 teletherapy. The other deep therapy patients are treated with 250 K.V. X-ray. Cobalt-60 has not revolutionized therapy. The basic fundamentals of deep radiation therapy are unchanged. Technics have been modified. Larger tumor doses are being given to some lesions with less radiation morbidity. Optimal tumor dose-therapy time relationships are not well established. Thus, different therapists may give different doses in longer or shorter times than other therapists and technics may vary somewhat. We hope future evaluation will establish optimal tumor doses, and in what length of time these doses should be given.

It should be remembered that the basic principles guiding our methods of treatment in cancer patients are in general unchanged with the use of cobalt-60 teletherapy. The choice of treatment is still surgical, radiologic or a combined attack by these two specialties. Each patient must be evaluated as to the best possibilities of treatment.

In cancer of the head and neck, esophagus, lungs, breast, cervix, urinary bladder, uterus, vagina, ovaries and testicular tumors, or any mediastinal or intra-abdominal cancer requiring deep therapy, I would prefer to treat with cobalt-60 in the majority of instances.

At this time the best treatment of post-operative carcinoma of the breast is in an undecided state. We are treating a series of patients with cobalt-60 and with 250 K.V. therapy. The treatment is directed to the node bearing areas. It will be some time

before it will be possible to determine the merits of each method since the reaction in the lungs may be latent.

I feel that cobalt-60 is far superior to 250 K.V. X-ray in the treatment of lesions of the head and neck.

The same tumor dose may be delivered with 250 K.V. X-rays in most instances and cure rates may be as high. Time will be needed before cure rates can be compared. In planning treatment for cancer patients with lesions in the above mentioned locations, I believe, at the onset of radiation therapy with cobalt-60, I would have more assurance that I was going to deliver a satisfactory high dose to the lesion without having to stop short of my goal because of severe skin reaction, poor tolerance of normal tissues or because of unbearable radiation sickness.

There are other special situations where cobalt-60 treatments have preference over medium volt radiation. These are as follows: treating through scar tissue; treating areas that have had previous inadequate radiation therapy; and treating areas where an operation has been done or is contemplated, such as in radical neck dissection.

Cobalt-60 teletherapy broadens the indications for palliative external radiation. Because of reduced morbidity it is tolerated better by more patients. The morale of patients during and following treatment is better. The patient is more comfortable and, in general, the disease is controlled over a longer period of time. This is particularly true in such instances as carcinoma of the esophagus and carcinoma of the lung.

Late diagnosis and the natural character of cancer increases the percentage of patients who are sent for palliative radiation therapy in the preterminal stages. This will have a tendency to underrate cobalt-60 teletherapy which is an important adjunct in the treatment of cancer patients and may in certain specialized lesions increase the cure rate by as much as 5 to 15 per cent.

Conclusions and Summary

Cobalt-60 is a radioactive isotope produced in an atomic pile by bombarding cobalt-59 with neutrons. Cobalt-60 disintegrates by emitting beta particles and gamma rays. The

emitted gamma rays have energies equivalent to X-rays produced by one to three million volt X-ray machines. Radiation of this magnitude is known as supervoltage radiation in comparison to medium volt radiation as produced by 250 K.V. X-ray machines. All radiation effect is produced by ionization of the tissues through which the radiant energy passes. Radioresistant cancer cells are no more sensitive to cobalt-60 radiation than to X-rays produced by different voltages when equal doses are given.

Cobalt-60 teletherapy has not changed the basic principles in the management of cancer patients. It has not revolutionized external radiation therapy. Medium volt radiation has not become obsolete and in most instances in the treatment of cancer patients the final results with 250 K.V. X-ray are as good as treatment with cobalt-60.

Cobalt-60 teletherapy has advantages over 250 K.V. X-ray in the following respects: (1) less skin reaction, (2) less absorption of energy by bone, (3) better depth dose, (4) better tolerance to therapy by the patient and thus less morbidity, (5) less difficulty in delivering a satisfactory tumor dose, (6) easier technics of treatment and dosage determinations, (7) normal tissues appear to tolerate cobalt-60 therapy better, (8) easier to do surgery through skin that has been irradiated heavily with cobalt-60 and complications are less, (9) scar tissue, previously irradiated skin and "poor risk" skin in general tolerate cobalt-60 better.

A disadvantage with cobalt-60 teletherapy is the possibility of over-irradiating underlying normal structures if strict attention is not given to accurate determinations of dosage. The tolerance of normal underlying tissues and organs must not be exceeded.

Cobalt-60 broadens the indications for palliation in cancer patients because of less morbidity and better constitutional tolerance to the therapy.

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Discussion

DR. GRANVILLE W. HUDSON (Nashville): Dr. Beveridge has certainly given us a wonderful presentation emphasizing the advantages and also the limitations of radiation therapy using Cobalt-60. Cobalt radiotherapy provides higher doses, diminishes skin reaction, enhances palliation, and reduces radiation sickness. Cobalt radiation can in many instances be used to advantage in the treatment of extensive involvement of the soft tissues when used at short treatment distances.

This allows one to take advantage of the rapid fall-off of the radiation intensity when utilized with a cone in contact with the patient's skin.

Probably the most marked difference between cobalt-60 teletherapy and conventional radiation therapy is the difference in skin effect. One of the main reasons for the reduction in radiation effect on the skin is that at the surface the radiation is out of electron equilibrium and more ionizing electrons are leaving the area than are entering it. Therefore, very little of the radiation is absorbed in the skin, and therefore little damage is done. Using radioactive cobalt, we have been able to deliver 5000 to 6000 roentgens to skin portals measuring from 50 to 150 sq. cm. Such doses given in a period of 4 to 6 weeks have resulted in no more than mild erythema.

Cobalt-60 radiotherapy represents a major technical advance in radiation therapy. Palliation may well be considerably improved, and at least it will help the patient tolerate an intensive course of radiation therapy and will reduce suffering due to skin damage.

A Rapid Method of Estimating Blood-Glucose Ranges. Kohn, J. *Lancet*, 2:119, 1957.

The author describes his experience with a rapid method of estimating blood sugar ranges, based on the use of "Clinistix." The method involved placing a drop of fresh blood from the fingertip or ear lobe on the impregnated tip of Clinistix so as to cover a length of about 0.5 cm. Only fresh blood was used because oxalated or citrated blood is more difficult to wash off. The blood was left on the Clinistix for 20 seconds and was then washed off under a stream of running water for a maximum of 5 seconds. The subsequent green-blue to dark blue color was immediately compared with a color scale. The matching should be completed within 25 seconds from the time the blood has been washed off because the color may later increase in intensity. Various batches of Clinistix were compared for sensitivity and no appreciable differences were found. A definite sign of deterioration is a brownish color of the impregnated tip and such a batch of Clinistix should not be used. Results were obtained in 545 samples of blood and there was a definite and constant correlation between certain ranges of blood glucose levels and the intensity and shade of color. The

sensitivity of Clinistix to glucose in blood under the test conditions seems to be about 0.03-0.04 Gm. per 100 ml., which is about twice its sensitivity to glucose in urine. Blood sugar levels below 30-40 mg. per 100 ml. did not produce any color. The first trace of a faint greenish-blue color may be seen at a level which is above 30 mg. per 100 ml. A more intense blue-green color indicated a blood sugar range up to 200 mg. per 100 ml., a deeper blue up to 250 mg. per 100 ml., and a navy blue up to 400 mg. per 100 ml. The results were more accurate in the lower ranges with less intense colors. Levels above 400 mg. per 100 ml. probably produce a maximum intensity of color and are too deep for any gradation to be appreciated. There are two main variables in the test: the timing at all three stages,—contact with blood, washing, and reading,—and the obvious personal variation in appreciation of color. The procedure is simple and rapid because it does not require any apparatus or reagents and can be completed in about a minute. The test indicates the clinically important sugar ranges but does not provide exact figures. (Abstracted for the Tennessee Diabetes Association by Charles A. Rosenberg, M.D., Memphis.)

CHEST INJURIES*

HUGHES CHANDLER, M.D.,† Jackson, Tenn.

The medical profession learned much about the management of chest injuries from the experiences gained in World War II and the Korean War. Although we are now technically at peace, guns, switch blade knives, ice picks, and razors are still employed to settle arguments when tempers flare. In this age of mechanized labor and automobiles that are geared too high for the roads they travel crushing injuries are assuming increasing importance. It is the purpose of this paper to outline the evaluation and care of these injuries.

Immediate Management

In the initial examination we should concern ourselves with the following:

1. Correction of conditions which produce disturbances of cardio-respiratory function
2. The control of hemorrhage
3. The prevention of infection

At the first glance we should make sure that the patient has an adequate airway.¹ This may be established by elevating the jaw, pulling the tongue forward, and aspirating the pharynx and trachea. In addition to blood and mucus we must look for broken teeth, chewing gum, regurgitated food and other foreign bodies. If tracheal suction does not clear the airway, immediate tracheotomy should be considered. Tracheotomies are rarely done unnecessarily. Too often they are done too late. No amount of blood plasma or oxygen will help until the airway is cleared. Sterile tracheotomy sets are usually available where emergencies are seen. A classical tracheotomy through the 2nd or 3rd tracheal ring is preferable. However, if only a knife is available a transverse incision is made in the crico-thyroid membrane and held open until a proper procedure can be carried out. Emergency tracheotomies should not be done on children under 13 years of age because of the danger of laryngeal oedema and stenosis.² The three types of

patient most likely to require tracheotomies are the following:

1. Head injuries
2. Maxillo-facial injuries and
3. The patient with a crushed or flail chest

We must bear in mind that shock can be due to an inadequate airway or poor pulmonary ventilation as well as to hemorrhage. Therefore in addition to replacement of blood loss we must restore respiratory equilibrium by stabilizing the chest wall and provide for ventilation of the lungs by clearing the airways and aspirating blood and air from the pleural space. Too much intravenous fluid and overtransfusion may lead to pulmonary oedema and death.

After an adequate airway has been established we should look for these complications:

1. Sucking wounds
2. Pneumo or hemothorax
3. Fractures of the bony cage
4. Cardiac tamponade
5. Injuries to mediastinal structures, esophagus or upper abdomen

X-rays afford the best means of assessing the damage and should be made as soon as possible. Upright PA and lateral films are preferable if the patient's condition permits. Otherwise a portable X-ray from the stretcher should be made. X-rays may furnish our only means of differentiating certain injuries such as a pneumothorax from a ruptured diaphragm. Frequent follow-up films will often save embarrassment. Even though the initial film is negative, subsequent X-rays may reveal pneumo or hemothorax or intrapulmonary hemorrhage. Lateral X-rays are especially valuable in localizing fluid pockets, areas of atelectasis, and plotting the course of missiles.

All sucking wounds should be closed immediately. A simple occlusive dressing will suffice to stop the exchange of air between the two lungs and the swing of the mediastinum. Later when the patient's condition permits he can be taken to the operating room and the wound carefully debrided

*Read before the Regional Meeting of the American College of Surgeons, April 9, 1957.

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and sutured under intratracheal anesthesia. A large sucking wound is more serious than a small one; and a sucking wound in an elderly patient with a lowered vital capacity is more apt to be fatal than in a healthy young patient.

If the wound is small and clean and there is not thought to be much damage to the underlying viscera, a simple closure may suffice. Subsequent accumulations of blood and air in the pleural space may be removed by thoracentesis. Larger wounds with more lung damage require intercostal catheter drainage through a closed water trap system.

A pneumo or hemothorax that does not cause respiratory embarrassment should best be left alone for the first 24 hours as it acts as a tampon against the bleeding points. After 24 hours blood and air should be aspirated in amounts not to exceed 750 cc. at a time until the pleural space is dry, and the lung re-expanded. Blood left in the pleural space for long periods furnishes the best possible culture medium for bacteria. As the clots are organized with scar tissue contraction, the vital capacity is diminished. Some of these hemothoraces will clot so that it will be impossible to remove them by aspiration. Streptokinase and streptodornase have been advocated for the liquefaction of these clots. There is a question whether these enzymes do actually dissolve the clots or whether they, by irritation, merely produce more pleural fluid. They sometimes cause unpleasant reactions and are less frequently used than formerly. The decortication operation should be considered for all organized hemothoraces of any size that remain after 3 weeks. This operation was first utilized for chronic empyema by Delormé, a Frenchman, around the turn of the century. Later during World War II, it was first used to remove organized hemothoraces and prevent subsequent "frozen lung."^{3, 4}

If the tear in the lung is sufficiently large, a tension pneumothorax may cause marked respiratory difficulty. Closed intercostal catheter water trap drainage will usually provide relief.

The flail chest is the most serious closed type chest injury seen in civilian life.

Multiple fractures of the ribs and sternum produce instability of the chest wall with paradoxical respiration and inadequate pulmonary exchange. Because of the great pain the patient avoids coughing and deep breathing. The cough mechanism is inefficient and blood and secretions accumulate in the bronchial tree with resulting atelectasis and pneumonitis. Vital capacity may be further reduced by associated pneumo or hemothorax.

Carter and Giuseffi first advocated tracheotomies for these patients in 1951.^{5, 6} This is probably the greatest contribution to the treatment of chest injuries in recent years. The tracheotomy serves several purposes. It eliminates approximately 150 cc. of dead air space in the nasopharynx and decreases resistance to breathing. It provides an opening through which secretions may be easily aspirated and oxygen can be readily administered. The tracheotomy should be done early and the tubes left in until the chest wall is thoroughly stabilized.

Avery and Morsch⁷ suggest that severely crushed chest injuries be tracheotomized and the uncuffed tracheotomy tube be connected to a special respirator. The Morsch respirator provides passive hyperventilation by means of intermittent positive intratracheal insufflation. The patient is kept in mild alkalosis and apnea. They report good results with seemingly hopeless cases. With this positive intratracheal pressure the ribs are pushed out where they can heal in proper position with little paradoxical motion and external skeletal traction on the thoracic cage is unnecessary. The Morsch respirator treatment appears to be based upon sound surgical and physiological principles and further reports will be awaited with interest.

Intercostal nerve block will alleviate pain and encourage coughing. Sedation should be given sparingly. Massive doses of antibiotics are indicated. If there is associated pneumo or hemothorax, intercostal catheter drainage through a water trap should be done. With these severe chest injuries we frequently see marked abdominal distention and paralytic ileus. The diaphragms are pushed upward and vital capacity decreased.

Decompression with Wangenstein suction will give considerable relief. One of the drugs that stimulate peristalsis such as prostigmine may be used.

The wise surgeon will usually be quick to explore a questionable abdomen in case of injury but reluctant to do a thoracotomy. There are, however, certain indications for surgical intervention in chest injuries that must be borne in mind.

1. Continuing hemorrhage. The blood pressure in the pulmonary circulation is much lower than that of the systemic (about 1/6). Continued hemorrhage indicates injury to a major vessel or to one of the systemic components, such as the internal mammary or intercostals.

2. Tension pneumothorax that is not controlled by multiple catheter closed intercostal water trap drainage. In such cases one should suspect a tear of the trachea or one of the major bronchi. The portion of lung distal to the tear will appear atelectatic on X-ray. Exploratory thoracotomy is indicated and if possible the torn airway should be sutured. If that is not possible it should be closed securely and distal portion of affected lung resected.

3. Cardiac Tamponade. Cardiac tamponade is recognized with wounds near the heart that are accompanied by cyanosis, shock, low blood pressure with a narrow pulse pressure, distention of the neck veins, high venous pressure, distant heart sounds and a still heart on fluoroscopy. There has been a tendency in recent years to treat these cases by aspiration rather than by open operation. Pericardicentesis may suffice for ice pick wounds. The larger wounds may require open operation and suture. There is only one point in the technique of the operative treatment that I would like to emphasize. After the heart wound has been sutured, I think it is important to make an opening between the pericardial and pleural spaces so that any postoperative accumulation of blood or serum will drain into the pleural space from which it can be easily aspirated.*

If the surgeon chooses to temporize with aspiration of a tamponade, he will be wise to do so in an operating room that is set up for surgery. Pericardicentesis is best

done through the costosternal notch with a 16 or 18 gauge needle pointed upward at a 45 degree angle. There is less danger of injury to the coronary vessels from this position.

4. Perforations of the esophagus or diaphragm. Perforating wounds of the esophagus carry an extremely high mortality. Many of them are unrecognized. Whenever it is known that a missile has traversed the mediastinum an exploratory thoracotomy is indicated with investigation of the esophagus. Any perforation should be sutured and drainage instituted. Perforations of the esophagus can also occur spontaneously and after esophagoscopy.

Esophageal perforations may be demonstrated radiologically by having the patient swallow iodized oil. Barium should not be used. You may also have him swallow methylene blue and see if it can be recovered by thoracocentesis.

It is extremely important that all wounds of the diaphragm be recognized and sutured. By plotting the course of a missile we can often determine from X-rays whether or not the diaphragm has been involved. Doubtful cases should be explored. Non-penetrating injuries can cause tears in the diaphragm with herniation of the abdominal contents into the pleural cavity. The individual who shows persistent shock, the cause of which is not apparent, should be suspected of having transdiaphragmatic visceral injury. The upper abdominal wall is innervated by the 10th, 11th and 12th thoracic nerves so that any injury to these ribs may cause pain and rigidity in the upper abdomen. Local block of these nerves may aid in the differentiation from intra-abdominal injury. If the pain, rigidity, and rebound tenderness is relieved after the block, intra-abdominal injury is not apt to be present. The surgical approach to thoraco-abdominal injuries may be thoracic, abdominal, or a combination of the two. If the left diaphragm is injured, an incision may be made in the lower left chest and if there is associated abdominal injury, frequently it can be handled by enlarging the diaphragmatic opening. Splenectomies and left nephrectomies can be done transpleurally without much difficulty. Wounds of

the stomach can be sutured. More extensive abdominal injury will be best cared for through a separate laparotomy incision.

On the right side thoraco-abdominal wounds are best treated by separate thoracotomy and laparotomy incisions. On the right side wounds of diaphragm are associated with injuries to the liver and blood and bile are sucked up into the pleural spaces. It is important that these wounds be drained sub-diaphragmatically and the perforation in the diaphragm be sutured.

Conclusion

In conclusion I would like to emphasize again the importance of the problem of chest injuries. They comprise approximately 25% of all traffic deaths. The basic principles of wound management, control of hemorrhage, stabilization of the chest wall, drainage of the pleural cavity and adequate airway must be kept in mind.

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Criteria for Determining the Proper Level of Amputation in Occlusive Vascular Disease. Patrick J. Kelly, M.D. and Joseph M. James, M.D.: *Jour. of Bone and Joint Surg.* 39:883, 1957.

From a review of 323 amputations, the authors conclude that a "below knee" amputation is to be considered when,—(1) there is a history of slow onset of the disease; (2) the presence of a palpable femoral pulse is desirable; (3) a functioning knee joint is a prerequisite; (4) the skin to at least the middle of the leg should be unaffected by ischemic changes; (5) there should be good bleeding at the site of amputation; (6) there should be some hope of rehabilitation of the patient; (7) thromboangiitis obliterans may be an indication for amputation below the knee if conservative measures and amputation of the toe have failed.

The indications for amputation above the knee are: (1) sudden arterial occlusion combined with a weak or absent femoral pulse; (2) sudden arterial

occlusion if there are other signs such as coolness of the skin above the middle part of the thigh, high venous filling time, evidence of severe ischemia by elevation-dependency tests, or evidence of only fair bleeding at time of amputation; (3) embolic occlusion and gangrene of the leg caused by peripheral aneurysm, which usually is atherosclerotic in origin. The indications for amputation of toes are lesions limited to a toe or possibly two toes,—(1) in patients in whom a clinical diagnosis of thromboangiitis obliterans has been made and in whom conservative measures have been exhausted, and (2) in patients in whom purely infectious diabetic lesions have not responded to conservative measures, or in patients in whom there are diabetic lesions with minimal occlusive vascular findings. Toe amputation can be expected to be successful only in thromboangiitis obliterans and in selected diabetic lesions. (Abstracted by Thomas F. Parrish, M.D., Nashville, Tenn.)

Though it has been recognized for four decades that pernicious anemia may occur in the Negro, there is still a misapprehension regarding this.

A COMPARATIVE STUDY OF PERNICIOUS ANEMIA IN THE NEGRO AND WHITE RACES

J. ELISE JONES, M.D. and WILLIAM F. DOWLING, M.D.,† Memphis, Tenn.

In the past it has been generally assumed that pernicious anemia is rare in the Negro. A recent British monograph by Davis and Brown¹ on megaloblastic anemias states that: "pernicious anemia is confined almost exclusively to people of Nordic racial ancestry. Occasional cases have been reported in patients said to be of pure blooded . . . African . . . stock, but they are so rare that the diagnosis in such patients is warranted only after full investigation." This is contrary to the opinion expressed by Schwartz and Gore² who reported 93 cases of pernicious anemia occurring in the negro race in 1943.

While previous reports stress the racial impurity of the American Negro and posit this admixture as a necessity for the acceptance of the diagnosis of pernicious anemia, recent reports by Trowell,⁶ and Woods and Rymer,⁸ of the occurrence of pernicious anemia in two racially pure Negroes in Africa suggest that as a criterion for making the diagnosis it is no longer a necessity. From the practical standpoint this is of academic interest only, for the patient with Negroid features who is seen initially with the diagnostic criteria of pernicious anemia requires specific therapy.

A review of the literature^{2-5, 7, 9} records 231 cases of pernicious anemia in patients of apparent negro ethnologic background. We propose to review the 75 cases of pernicious anemia admitted to the City of Memphis Hospitals during the period 1940 through 1954 and to compare the incidence and clinical features in 35 negro patients with similar observations on 40 white patients.

These cases met the following criteria for pernicious anemia:

1. Macrocytic anemia.

2. Achlorhydria to histamine and/or alcohol stimulation.
3. Reticulocyte response to specific therapeutic agent.
4. Symptoms suggestive of pernicious anemia such as sore tongue, numbness and tingling, and weakness.
5. Megaloblastic erythropoiesis in bone marrow aspirations performed.

Analysis of Data

Figure 1 illustrates the distribution of the

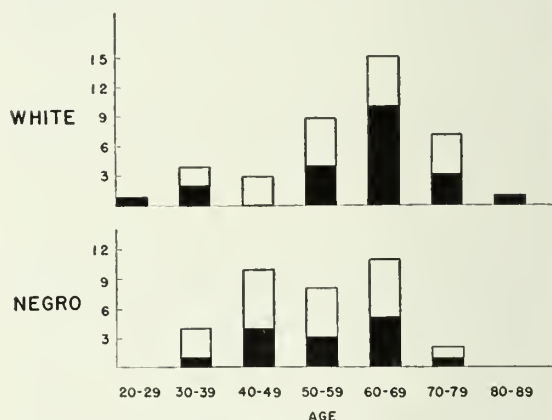


FIG. 1. Distribution of pernicious anemia by race, sex, and age. The white blocks represent females and the black males.

white and negro patients in this series by age and sex. There were more negro patients below 50 years of age, and more white patients past 60 years of age than Negroes.

The greatest incidence of females (21) to males (14) in the negro patients is further accentuated by correcting for the somewhat fewer female admissions. The corrected ratio of females to males is 1.7:1, the corrected white ratio is 1:1.

Table 1 illustrates the approximate 3:1

Table 1

	Negro	White
Total Admissions	131,589	51,330
Percentage of total admissions	71.9%	28.1%
Total cases of pernicious anemia	35	40
Percentage of total cases of pernicious anemia	46.6%	53.4%
Cases per 100,000 admissions	26	77.8

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admission ratio of Negroes to white patients in the City of Memphis Hospitals. The incidence of pernicious anemia is 3 white patients (78 per 100,000) to 1 Negro (26 per 100,000).

The data giving some of the more pertinent clinical manifestations are summarized in figure 2. It is suggested that glossitis and

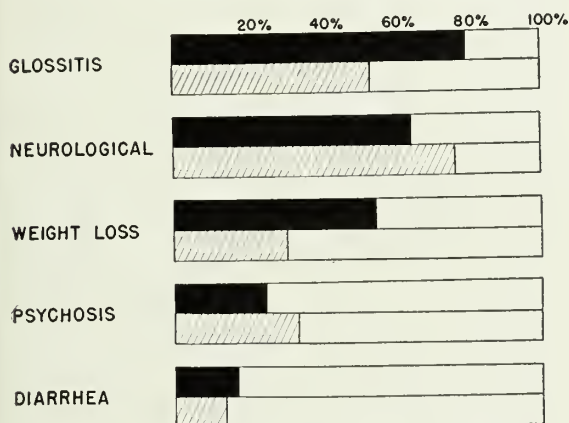


FIG. 2. Comparison of the racial incidence of major symptomatology of pernicious anemia expressed as percentage of total number of cases in series. Black representing white patients and the white, black patients.

weight loss are more frequent in the white race, while subjective neurologic complaints are apparently more common in the Negro. Of the 22 patients with psychoses there was a distinct predilection for females without a racial pattern. In addition to the 12 patients who were initially seen with diarrhea, two patients had a prolonged history of constipation.

A review of the neurologic signs on the initial examination revealed that ataxia or paralysis was noted in 37 per cent of the negro patients and 23 per cent of the white patients. The average initial erythrocyte count of 22 patients, without regard to race, with advanced neurologic disease is not statistically different from the average erythrocyte count of the 53 patients with minor or absent neurologic signs.

Fifty-one of these patients had gastrointestinal series performed at irregular intervals. Four of these studies revealed pathologic changes, three of which proved to be carcinoma of the stomach at operation (all occurring in white patients). One benign gastric polyp was noted radiologically in a white man and proved by surgery.

In reviewing the bone marrow smears of 48 patients, there was concomitant occurrence of iron deficiency in six patients. Two deaths occurred in Negro patients shortly after admission. These patients had far advanced disease with complications.

Summary

1. This report brings to 266 the total number of Negroes with pernicious anemia reported in the literature.

2. There was a greater number of negro patients under 50 years of age and fewer past 60 as compared with the white group.

3. A significantly higher incidence of pernicious anemia was noted in the negro female.

4. A higher incidence of neurologic involvement was noted in the Negro.

5. Pernicious anemia is still a cause of death despite the availability of a specific agent.

The authors wish to express appreciation to Dr. L. W. Diggs, Miss Ann Bell, and Miss Mari-bette Sifford.

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The corticosteroids have received a place in the treatment of the acute manifestations of calcific bursitis and tendonitis.

CORTICOSTEROIDS LOCALLY IN THE TREATMENT OF SYMPTOMATIC CALCIFICATIONS OF SOFT TISSUES*

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With the observation by Hench and his associates, in 1948, of the beneficial effect of cortisone on the inflammatory and allergic manifestations of rheumatoid arthritis and the collagen diseases, the corticosteroids began to take their place in the medical armamentarium. Today, these drugs constitute a very effective weapon in many conditions, and continually there appear new indications for their use. This paper presents not a new indication for the use of corticosteroids, but emphasizes and illustrates their effectiveness in a group of conditions for which they are an "ace in the hole" if nothing else avails.

Symptomatic soft tissue calcifications most often occur about the shoulder joints. All of us are familiar with the patient who presents himself with an acutely painful and immobile shoulder. Often there is a history of some mild insult to the region, as chilling, or maintaining an unusual or uncomfortable position for a period of time. Occasionally there has been a more significant injury which may have taken place years previously. On examination the shoulder is fixed in position, and motion in any plane, active or passive, is extremely painful. There is usually a definite point of maximum tenderness and the X-ray film will reveal a "soft" appearing deposit of calcium adjacent to the shoulder joint. Anatomically, this deposit is in either the subdeltoid bursa or the tendon of the supraspinatus muscle.

Not only is the patient presently acutely uncomfortable, but his condition is potentially a disabling one. In the fixed shoulder joint adhesions form quickly. It is said that in about three weeks fairly dense adhesions will form under these conditions. I believe this is a conservative estimate in many instances, and a delay of

three weeks before obtaining active mobilization of the shoulder can produce a degree of loss of motion requiring surgical treatment. It is not within the scope of this paper to discuss the pathogenesis of this condition. Suffice it to say that it is not well understood. This same picture can occur without X-ray evidence of calcium and the consequences of prolonged immobilization are the same. But, in my experience, when there is no demonstrable calcium there is less likely to be a definite point of maximum tenderness, and the results of hydrocortisone injection are not as reliable.

In the 15 cases comprising this report, a suspension of hydrocortisone acetate (25 mg. per cc.) was used in treatment. In the more recent cases, Hydeltra T.B.A., a suspension of prednisolone tertiary butylacetate (20 mg. per cc.) was substituted for the hydrocortisone. Surgical asepsis was practiced, the area, which was the shoulder in all except one instance, being prepared with Phisohex. The point of maximum tenderness was carefully located. (This is a very important step in the procedure and often requires some time to gain the patient's full cooperation. Frequently the apprehensive patient who is already in acute pain will grimace at the slightest touch anywhere on the shoulder, but with a little time and some explanation of the procedure one is usually able to locate the exact site where injection will be most effective.) Directly over this point the skin is injected with 2 per cent procaine and the needle (20-gauge) is then passed into the subcutaneous tissue and muscle where a little more procaine is injected. The needle is advanced very slowly until the proper depth is reached. In spite of the local anesthetic, the patient usually complains of a very sharp pain when the needle reaches the involved area. If the proper area has been found 2 or 3 cc. of procaine are injected.

*Read at the Annual Meeting of the West Tennessee Medical and Surgical Association, May 9, 1957, Paris, Tenn.

(Here, the patient often volunteers the information that the pain he has had in his shoulder for the past day or two is gone.) The syringe is detached from the needle leaving it in the same position. Another syringe loaded with the steroid is attached to the needle and the material deposited into the same area. After removal of the needle the patient is often surprised to discover that he can move his shoulder without severe pain. He should be advised that he will probably have some return of pain when the local anesthetic has worn off, but that following this he should find a gradual and progressive reduction in the severity of his pain. Experience in using this approach to this particular problem will justify a little optimism.

In analyzing these 15 cases, the results have been classified into three groups,—excellent, good, and poor. Those patients considered to have obtained an *excellent result* were those who were free of pain and limitation of motion within two weeks from the date treatment was begun, and who had not had a recurrence of difficulty during the follow-up period. Twelve of the patients in this group were considered to have had excellent results. The 2 patients classified as having had *good results* required longer than two weeks to obtain complete freedom from pain and limitation of motion; recurrences, if any, were so mild that retreatment was considered unnecessary. The one patient considered to have had a *poor result* obtained no lasting benefit from three injections of a steroid over a period of one month, and eventually required surgical correction of a "frozen" shoulder.

For clarification, "treatment" in this group of patients consisted only of physiotherapy, usually administered at home, and shoulder exercises in addition to the injections of steroid. Eleven of the 12 patients having excellent results required only one injection of a steroid. The remaining one

had two injections. One of the patients having a good result required five injections of the hormone, which was the largest number of injections given to a single patient in this series.

The results of this study may be summarized as follows: An average of 1.5 injections of steroid were given to 15 patients averaging 50 years of age. The average treatment time was slightly under two weeks. Twelve patients (80 per cent) had excellent results, 2 patients (13 per cent) had good results, and one patient (7 per cent) had a poor result. The average follow up period was 18.5 months.

In *conclusion*, I would like to re-emphasize the importance of early relief of acute pain and mobilization of the shoulder in cases of calcific bursitis or tendonitis. The results obtained in this short series of cases with the use of locally injected hydrocortisone or prednisolone, following the indications and employing the technic described, seem to indicate that this approach should be used as the initial treatment for these painful and potentially disabling conditions.

TABLE OF RESULTS

Age	Sex	Number Injections	Treatment Time	Result	Follow-up	Recurrences
49	M	5	5 wks.	good	40 mo.	1 mild
36	F	3	4 wks.	poor	Required surgery—frozen shoulder	
45	F	1	1 wk.	excel.	30 mo.	none
47	F	1	1 wk.	excel.	15 mo.	none
29	M	1	1 wk.	excel.	36 mo.	none
70	M	1	1 wk.	excel.	36 mo.	none
50	F	1	1.5 wk.	excel.	24 mo.	none
80	M	1	1 wk.	excel.	6 mo.	none
31	F	1	2 wks.	excel.	18 mo.	none
40	F	1	1 wk.	excel.	5 mo.	none
55	F	1	1 wk.	excel.	5 mo.	none
56	F	1	1 wk.	excel.	5 mo.	none
51	F	2	2 wks.	excel.	1.5 mo.	none
55	M	2	4 wks.	good	24 mo.	none
46	F	1	1 wk.	excel.	1.5 mo.	none
Averages:						
50	1.5	2 wks.	80% excellent	18.0 mos.		
			13% good			
			7% poor			

STAFF CONFERENCE

University of Tennessee College of Medicine*

Nephrolithiasis Due to Parathyroid Adenoma

DR. HARWELL WILSON: Gentlemen, we have two interesting cases from a diagnostic as well as from a therapeutic point of view to consider this afternoon. Dr. Lovelace, will you present the first patient?

DR. JOHN R. LOVELACE: This is a 17 year old colored male admitted to the John Gaston Hospital June 30, 1957, with a chief complaint of right flank pain and vomiting of 12 hours duration. The patient's present illness began 7 months ago at which time he was hospitalized with left flank pain, vomiting and gross hematuria. Urologic "work-up" revealed a stone at the left uterovesicle junction which passed spontaneously the second hospital day.

Laboratory examination at that time revealed a serum calcium of 12.2 mg./100 ml. and a phosphorus of 2.2 mg./100 ml.

This "work-up" was prior to the Christmas season and the patient signed out of the hospital against medical advice without further study. He was apparently well until 12 hours prior to the present admission when he returned to the hospital with intermittent right flank pain, gross hematuria, and vomiting. The clinical impression on admission was recurrent urinary calculus, and a plain film of the abdomen revealed what was thought to be bilateral nephrocalcinosis.

The physical examination was negative with the exception of slight tenderness in the right costovertebral angle and right lower quadrant, and an ovoid (3 x 4 cm.) palpable mass in the left side of the neck, which was not tender but displaced the trachea and moved on swallowing.

Laboratory examination at this time revealed a hematocrit of 36, gross hematuria, an elevated serum calcium (12.9 mg./100 ml.) and decreased serum phosphorus (2.2 mg./100 ml.). The urinary Sulkowitch was 4+ indicating an abnormal urinary excretion of calcium.

DR. WILSON: Dr. Tyson, as the attending surgeon responsible for this patient, would you care to discuss further the findings from a laboratory and X-ray point of view and also tell us your reasoning in the diagnosis that was reached after these studies?

DR. WILLIAM T. TYSON: In addition to the findings which Dr. Lovelace has already mentioned, there were further X-ray studies of interest in this case. There was subperiosteal decalcification in the metacarpal bones and absorption of the lamina dura about the teeth. These findings, along with the history of urinary calculi, high serum calcium, and the low serum phosphorus are considered highly suggestive of hyperparathyroidism. Additional evidence was obtained by a barium swallow which showed a filling defect in the left side of the esophagus which was presumed to be due to pressure caused by the suspected parathyroid tumor. It is interesting to note that in this particular case there was a definitely palpable mass in the left side of the neck. This is rather unusual in that thyroid adenomas are not large enough as a rule to be clinically palpable.

There are 5 laboratory tests which are diagnostic of primary hyperparathyroidism. First, there is an increased serum calcium above the normal level of about 10.5 mg. per 100 cc. There is a decrease in the serum phosphorus below the normal of 3.5 mg. per 100 cc. The urinary calcium is increased above 200 mg. in a 24 hour period as measured by the Sulkowitch method. The urinary phosphorus is also increased. In cases in which there is skeletal involvement there is also an increase in the alkaline phosphatase above the normal of 2 to 4 Bodansky units.

DR. WILSON: This patient shows a number of interesting laboratory findings. I think it should be pointed out, however, that in many cases the laboratory findings are not nearly so helpful as is true in this patient. Dr. Bramlitt, do you have a question?

DR. E. EUGENE BRAMLITT: Did this patient have any of the cystic changes commonly seen in von Recklinghausen's disease?

DR. WILSON: Dr. Lovelace, will you answer the question?

DR. LOVELACE: There were no extensive bone changes in this patient other than those shown in the metacarpals and the absence of the lamina dura about the teeth.

DR. E. F. SKINNER: Was the alkaline phosphatase determination helpful in the diagnosis in this case?

*From the Departments of Surgery, University of Tennessee College of Medicine, and the John Gaston Hospital, Memphis, Tenn.

DR. WILSON: The alkaline phosphatase was elevated and reflected some changes which were shown in the bones or X-ray examination. In the more severe type of this disease, where there are extensive cystic changes in the bones, one would expect even more change in the level of the serum alkaline phosphatase. In this particular case, the patient's alkaline phosphatase was 11.4 Bodansky units. Is there any further discussion regarding the laboratory studies in this patient before we discuss the findings at operation?

DR. LOVELACE: It might be pointed out that the level of serum calcium is dependent somewhat on the serum protein level. If one has a patient with low serum proteins, total calcium will not be elevated if hyperparathyroidism is present. It is the ionized calcium which reflects the degree of hyperparathyroidism but a considerable amount of the total calcium is protein bound. We felt that the protein in this patient was within the normal limits.

DR. WILSON: Dr. Lovelace, will you describe the operation?

DR. LOVELACE: We explored this patient through the usual thyroid incision and the exploration was carried out on the right side of the neck first; the right parathyroid

glands were clinically identified and found to be within normal limits. On the left side, near the superior pole of the thyroid was a 3 by 4 by 1 cm. oval, brownish-tan mass. (Fig. 1.) There was some extrinsic pressure on the esophagus. There were many large collateral vessels about this adenomatous mass, the mass being incapsulated in a fairly well defined capsule. Frozen section of this tumor revealed it to be parathyroid tissue. The weight of the excised parathyroid adenoma was 14 Gm.

DR. WILSON: This patient was fortunate, in that the tumor was so readily found. He was also fortunate in that this adenoma proved to be benign. Dr. Skinner, would you comment further upon the likelihood of finding such tumors elsewhere?

DR. SKINNER: This patient was very fortunate in that his tumor was palpable before operation and readily located. In perhaps 3 to 5 per cent of these patients, however, the tumor is not found within the neck and will be located eventually in the mediastinum or even in the pericardium. To my knowledge in all of the cases at the John Gaston Hospital the tumors have been found in the neck, and mediastinal exploration has not been necessary. However, if the chest needs to be opened, it might be

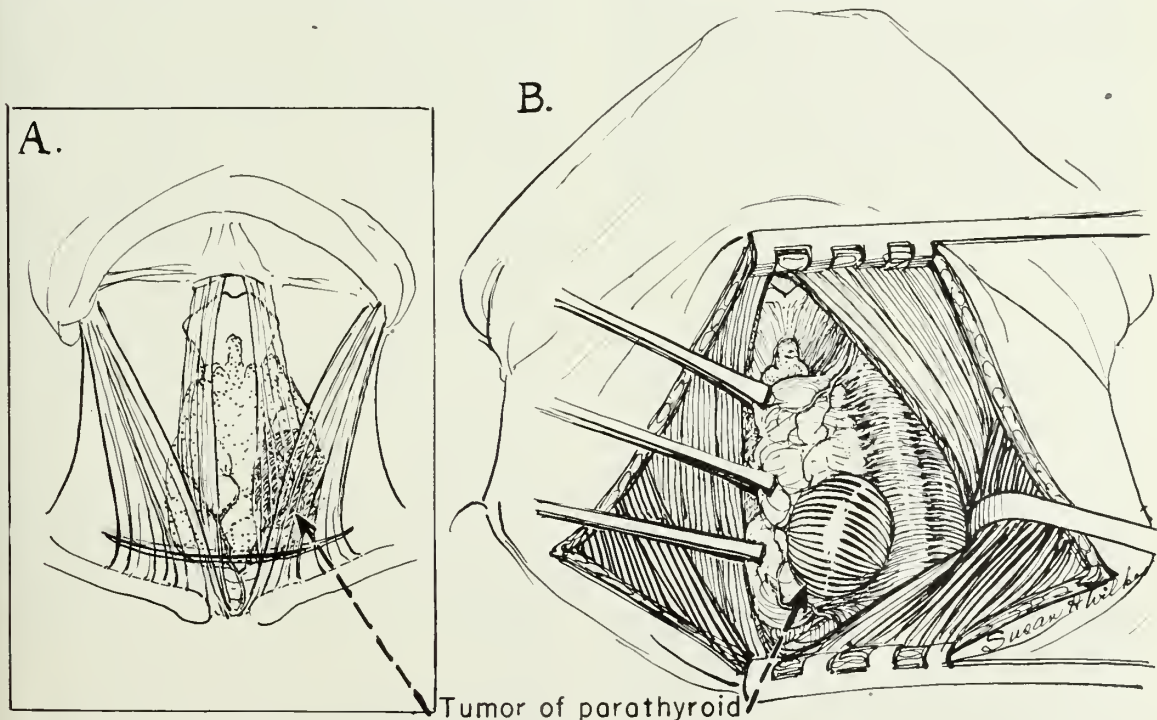


FIG. 1. Large adenoma of parathyroid beneath left lobe of thyroid gland.

wise to use a sternum splitting incision to get adequate exposure of the anterior mediastinum and pericardium.

DR. WILSON: Dr. Bramlitt, did you have a further comment?

DR. BRAMLITT: Certainly, more of these cases could be discovered if patients with pancreatitis and peptic ulceration, as well as those with urinary stones, would be checked more frequently with a urine Sulkowitch determination. This is a very simple test, and if suggestive of a parathyroid lesion, a calcium and phosphorus determination should be performed. It is said by some that 5 per cent of patients with nephrolithiasis have parathyroid adenomas. This figure may be somewhat higher than we have found.

DR. WILSON: Dr. Tyson, I wish you would continue this discussion with reference to two points which should be brought out. First, tell us what method was used in the immediate postoperative period to prevent tetany in this patient, and second, would you make some comment regarding what you consider the prognosis in this particular individual.

DR. TYSON: This particular patient did not manifest any clinical evidence of postoperative tetany. It should be remembered however, that postoperative tetany occurs in approximately 45 per cent of these patients, the onset occurring as early as four days postoperatively and lasting three to four months. Tetany can usually be prevented by the intravenous and oral administration of calcium. It was considered wise to do this in this patient, and the fact that he received calcium may have prevented symptoms of tetany from arising. A.T.-10, or dihydrotachysterol, is a synthetic parathyroid hormone. It is of little value in the treatment of acute tetany but is of great value in long standing cases.

The prognosis in this patient is favorable, as his NPN returned to a normal of 30 mg. from a preoperative level of 50 mg. He still has two renal calculi which may require subsequent removal. The urologists feel that he has good urinary tract function. The prognosis depends largely upon the amount of renal damage which exists since

the bone changes are nearly always reversible.

DR. WILSON: Thank you, Dr. Tyson. This patient, then represents one of those rare individuals who has continued to form renal stones, but who has a good opportunity of being relieved of this unfortunate condition since the abnormality in calcium metabolism was found to be caused by disease of the parathyroid gland and this diseased gland has been removed.

I think one might consider that disease of the parathyroid gland is a late comer among endocrine abnormalities which we now frequently recognize. For a long period of time the surgeon was interested in the parathyroid gland only as a danger spot during the course of thyroidectomy, since it was realized that if the parathyroid should be removed the patient might succumb. Actually, it was in 1880, that Sandstrom, a Swedish physiologist, first described a parathyroid gland and Gley, a French physiologist, about 11 years later mentioned that there was a relationship between tetany and the removal of the parathyroid gland. Knowledge regarding this condition developed in an interesting manner in that in Europe, certain pathologic changes in bone, namely, von Recklinghausen's disease, were found at autopsy to be related to adenoma of the parathyroid. In this country, Collip developed a potent parathyroid extract and found that this extract would produce changes in the bones of animals. It remained, however, for Dr. Fuller Albright at the Massachusetts General Hospital to call attention to the fact that patients with urinary stones might have this condition caused by an abnormality in the parathyroid gland. The Massachusetts General Hospital group certainly made many outstanding contributions to our better understanding of this condition. All of us are familiar with the brilliant clinical physiological work done in this field by Dr. Albright and through the years, Dr. Churchill and Dr. Oliver Cope have certainly contributed much to our better understanding of this condition.

Arteriovenous Fistula—Carotid Artery and Internal Jugular Vein

DR. WILSON: Dr. Eugene Bramlitt,

would you present the next patient to us, please?

DR. BRAMLITT: This patient is a 45 year old colored man who was wounded in the neck 22 years ago by a 32 caliber bullet. The bullet entered the left side of the neck just beneath the angle of the mandible, the point of exit being just posterior to the right shoulder. Following this injury, the patient noted a "purring" feeling over the right sternoclavicular joint. Through the years, the patient has suffered no symptoms other than this "purring feeling" from his wound; however, he has noted a gradual increase in the size of the veins on the right side of the neck and in the right arm. He has had no sign of cardiac decompensation.

Physical findings are limited to the heart and the right arm and right side of the neck. The heart is enlarged somewhat, the point of maximum impulse being at the 6th intercostal space in the left axillary line. There is a Grade 2 systolic murmur at the apex which may be a murmur transmitted from the lesion in the neck. There is marked venous distention of the right side of the neck. The bruit cannot be obliterated by pressure. There is marked enlargement of the veins of the right arm. The patient's blood pressure was 160/80 on admission. There was no difference in the blood pressures of the right and left arms. The pulse was 88. A tentative diagnosis was made from these findings of *arteriovenous fistula* of the right side of the neck.

DR. WILSON: I believe this patient does have an arteriovenous fistula, although all of the diagnostic criteria which we like to have cannot be demonstrated in this particular patient. The fact that the patient has a history of an injury in this region and the markedly distended veins which are present, coupled with the continuous to and fro machinery-like murmur make us feel almost without question that this patient does have an arteriovenous fistula. If this fistula were at a location making it possible to obliterate the pulsating mass with pressure, we would anticipate a slowing of the pulse rate and an elevation in the blood pressure while such obliterative pressure was being exerted. I feel very strongly that this patient should be operated upon since this will probably keep him from going into heart failure. We do not know the exact location of this fistula and from a point of view of making the approach as safe as possible, I feel we should certainly have a very adequate control of the great vessels both proximal and distal to the lesion. Actually, we do not know whether the innominate

vessels are involved or whether the fistula is simply limited to the great vessels in the neck. It would seem to me that it would probably be best to secure adequate exposure by carrying out a subperiosteal resection of the clavicle and also perhaps at the same time to split the sternum.

Dr. Skinner, what is your feeling as regards the safest approach we might use in this patient?

DR. SKINNER: I certainly agree with Dr. Wilson, that operation should be done on this patient at this time, before he shows any further evidence of cardiac enlargement or decompensation. I think it most important in handling these cases to have adequate exposure with control of the vessels on each side of the arteriovenous fistula. We have tentatively mapped out such an incision including one arm out along the clavicle; and another J shaped incision down the mid-sternum to the third right inter-space. One might extend the incision upward along the sternocleidomastoid muscle so that all vessels can be controlled before actually attacking the fistula itself. In view of the rather tremendous venous distention in the neck, we would anticipate a greater than average blood loss and certainly should have plenty of blood on hand before surgery is attempted.

DR. WILSON: Dr. Bramlitt, will you describe the operation we performed on this patient?

DR. BRAMLITT: Dr. Wilson and Dr. Skinner operated upon this patient. The incision was similar to the one which Dr. Skinner mentioned previously. The first limb of the incision was made extending over the medial two-thirds of the clavicle to the midpoint of the sternum, down the middle of the sternum to the third intercostal space and then through the third intercostal space on the right. The clavicle was then removed subperiosteally, the sternum split down its middle to the third intercostal space and the rib cage opened as a trap door. (Fig. 2.) Tapes were placed about the great vessels. It was found that the common carotid artery and the internal jugular vein were involved in the arteriovenous fistula. Control of these vessels was obtained on the proximal side. The in-

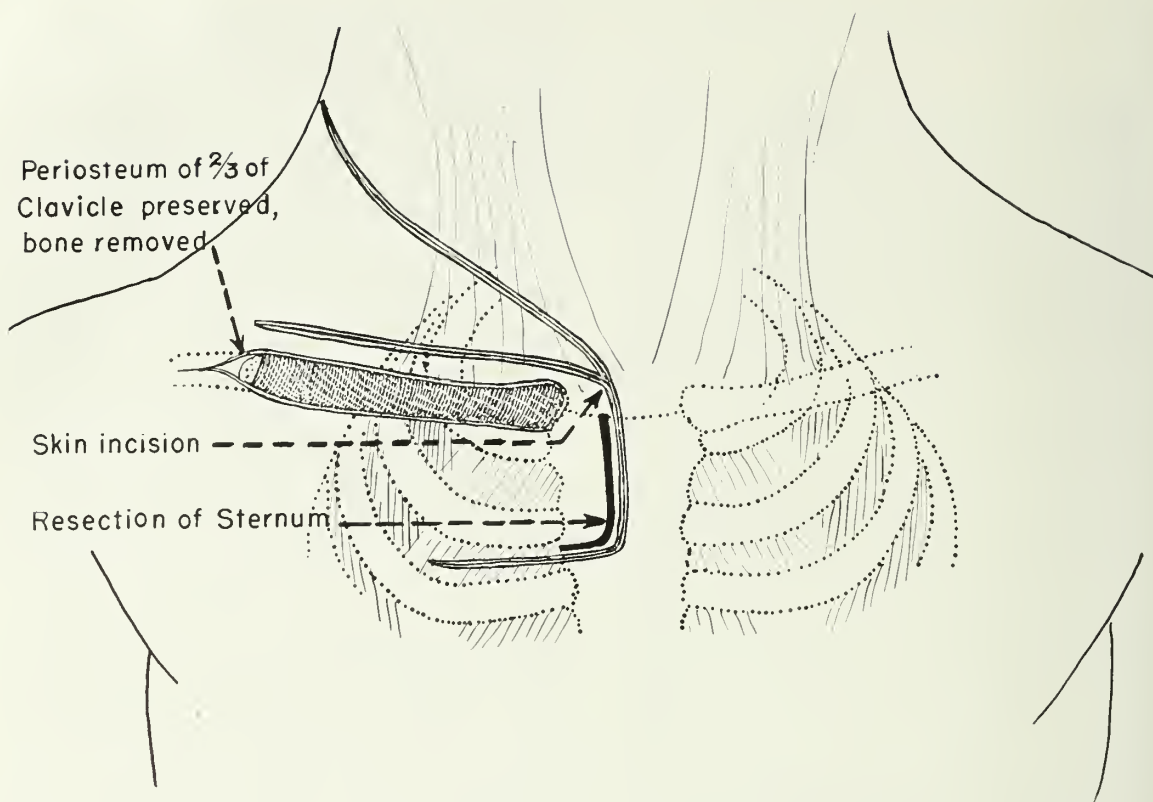


FIG. 2. Skin incision to expose large arteriovenous fistula and traumatic aneurysm. Subperiosteal resection of clavicle and division of the sternum employed to secure proximal control of great vessels.

cision was then carried into the neck along the anterior border of the sternocleidomastoid muscle and control of the vessels was obtained from above. There were numerous large veins going into the area involved in the arteriovenous fistula. These were ligated where possible. The common carotid artery was clamped, occluding the flow momentarily above and below the arteriovenous fistula and an endoaneurysmorrhaphy was done, thereby repairing the artery through the opening in the vein, and preserving the continuity of the common carotid artery. During the dissection an aneurysm was also found on the medial side of the common carotid artery approximately 3 cm. in diameter. A tangential clamp was placed across the aneurysm. It was then removed and the defect in the common carotid artery repaired by continuous suture of 3-0 arterial silk. Flow was then re-established in the carotid artery and was apparently of normal volume. The wound was then closed. (Fig. 3.)

DR. WILSON: Dr. Tyson, what would you

say are the factors which are of importance in a given case of arteriovenous fistula as regards the patient's likelihood of developing heart failure?

DR. TYSON: There are three factors which are important. First, the size of the opening,—the greater the size of the opening the more likelihood there is of heart failure developing. Second, the duration of time that the fistula has existed. Third, the proximity of the fistula to the heart,—the closer the anomaly is to the heart, the more likely the chance of heart failure developing.

DR. WILSON: Dr. Lovelace?

DR. LOVELACE: It is interesting that in most arteriovenous fistulas due to trauma, a false aneurysmal dilatation is present on the opposite side of the artery. This is due to the knife or bullet, as the case may be, entering both sides of the arterial vessels producing a false aneurysmal effect of the opposite side. This patient had such an aneurysm.

DR. WILSON: Dr. Skinner, do you have further comments regarding this patient?

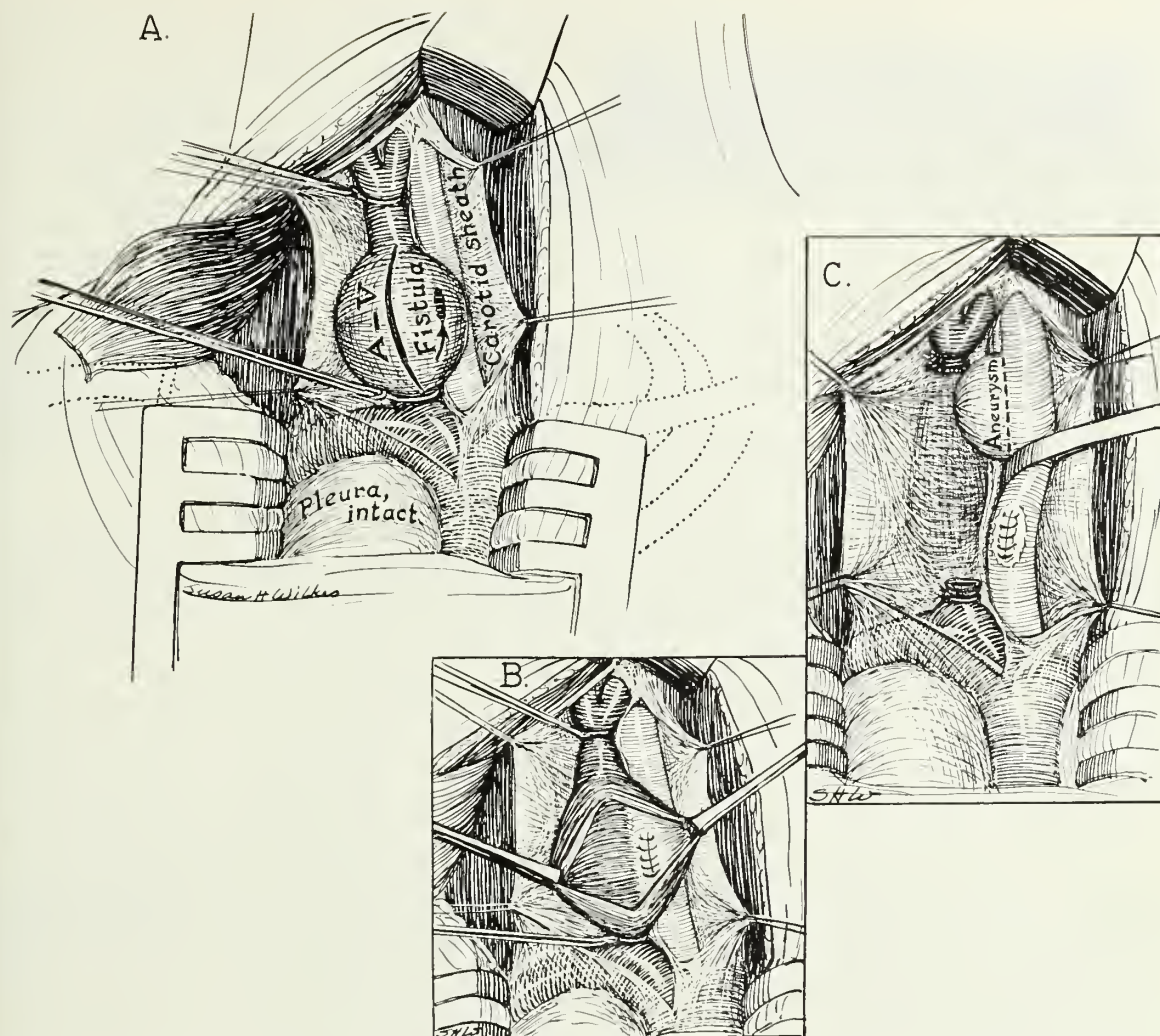


FIG. 3. Drawing showing arteriovenous fistula and traumatic arterial aneurysm involving the great vessels of the neck.

DR. SKINNER: This patient had a compensatory increase in his blood volume before surgery with a hematocrit of 48 per cent. During and after surgery, he required only 1300 cc. of blood to give him a normal blood volume postoperatively. I think a good part of this was due to the generous incisions which also saved us operative time. His postoperative convalescence was exceedingly smooth and gratifying.

DR. WILSON: Dr. Lovelace?

DR. LOVELACE: It might be brought out that in the peripheral arteriovenous fistula, because of a short-circuit in the bloodflow, the period of asystole in the heart is decreased, thereby increasing the pulse rate. By obliterating this fistula, you will restore the asystolic phase of the heart to its normal time, slowing the pulse and causing a rise in the blood pressure by increasing the peripheral resistance. The bruit in these patients is that of a to and fro murmur as

contrasted to that which is present in an aneurysm which is a blowing systolic murmur.

DR. WILSON: This patient should have a very excellent prognosis since the arteriovenous fistula has been repaired. The patient should have no cardiovascular difficulty as regards having the heart overworked from the short-circuiting of the circulation; and also, since it was possible to save the carotid artery, he should have no difficulty with the circulation to the brain. I believe that quadruple ligation and excision of an arteriovenous fistula is still a very worthwhile procedure and perhaps gives the very least chance of being followed by recurrence. However, I am sure that all of us feel a sense of gratification when it is possible to close an arteriovenous fistula and at the same time preserve the circulation through a major artery such as the carotid.

CLINICOPATHOLOGIC CONFERENCE

Vanderbilt University School of Medicine* Non-Bacterial Endocarditic

DR. VERNON KNIGHT: This afternoon I'm going to read through this protocol making certain comments, and then after that is finished we will discuss the diagnostic features of the case.

This was the first Vanderbilt Hospital admission of a 19 year old white male with the chief complaint of dark urine. (Before we go too far, I would like to ask Dr. White something about this patient's background. Was he mentally ill? What was his environmental situation? Is there any means of evaluating the carbon tetrachloride exposure quantitatively? What was he using it for—is that the limit of the information? It is of great interest to know what the doses of toxic agents are, and I am impressed that if this was within recent years there has been enough concern about the toxicity of this agent that one would hesitate to incriminate carbon tetrachloride casually.) Six weeks before this admission he first noted a severe sore throat which was treated with one injection of penicillin with gradual improvement. Four weeks before admission he developed a generalized skin rash. Ten days before admission he first noted gross hematuria, oliguria and facial edema which persisted until admission. Four days before admission he noted a red, tender streak on the linear aspect of his right calf which subsided in a few hours. For three days he had recurrent sharp, stabbing left upper quadrant pain accentuated by straining, coughing and deep inspiration. On the day before admission he was suddenly unable to use his left arm.

On the day of admission, while coughing and vomiting, he noted two or three tablespoonsful of blood in his mouth. (This, to me, is an unusual finding, and even at this point, after looking it over carefully, I am still unable to fit it into the story.) There was a history of chronic cough, productive of small amounts of yellowish fluid. (This is a 19 year old boy who is a little young to have developed the usual signs of chronic pulmonary disease. This point could be of importance to us; it might indicate some acute pulmonary disease, either incidental or directly contributory to this man's illness. Perhaps he had histoplasmosis; perhaps he had tuberculosis. Perhaps he had some congenital abnormality of the lung with persistent infection. Maybe he has a post-nasal drip or sinusitis; that is conceivable, but a little atypical.) He was exposed to carbon tetrachloride

for approximately four weeks. (This is a very troublesome point with me because I have to guess at the dosage. There is no question about the lethal effects and toxicity of this agent so we will have to keep this in mind as we go along. His history, as we have gone thus far, suggests to me the possibility of glomerulonephritis, the question of rheumatic fever can also be considered; this may have been a streptococcal sore throat and we think of the sequelae of such an infection, particularly rheumatic fever. Glomerulonephritis occurs in a small percentage of patients under the same circumstances. Rheumatic fever and glomerulonephritis very infrequently occur together, only a small percentage of occurrence and I think probably such a possibility could be dismissed in this case.)

Physical Examination: T 98.2°; P 80; R 20; BP 155/95. (This blood pressure value must indicate some hypertension in a 19 year old man. Were there any other blood pressure findings? Yes, there was one of 170/135 and one of 140/100. Well, this is even more definitive then.) He was well-developed and well-nourished and in no acute distress, but somewhat lethargic. There was a papular erythematous rash over the trunk and extremities. (An erythematous rash may occur with rheumatic fever, it may be seen in glomerulonephritis, in drug sensitivity reactions, and it is even recorded in carbon tetrachloride poisoning.) There is narrowing of the retinal arterioles, but no hemorrhages or exudates were seen. (I think narrowing of the retinal arterioles in a 19 year old is a significant finding.) The throat was benign, the neck was supple. The lungs were clear. The heart was enlarged 12 cm. beyond the mid-sternal line. The 2nd pulmonary sound was markedly accentuated. There was a grade 3 decrescendo diastolic murmur to the left of the sternum in the 4th interspace. There was marked bilateral costovertebral angle tenderness, and there was also moderate tenderness in both upper quadrants with muscle guarding. The liver, kidney and spleen could not be felt. There was mild edema of the hands, face and feet. There was left facial weakness, the tongue protruded to the left, there was paralysis of the left arm and weakness of the left leg. There was hyper-reflexia of the left side with sustained ankle clonus. There was redness and tenderness over a vein of the right lower leg. (Now, if we would attempt to relate some of these physical findings to the history, I cannot interpret the rash at present time. The narrowing of the vessels, the edema, the hypertension, the tenderness in the costovertebral angles all suggest some type of renal involvement, probably glomerulonephritis in view of the infection preceding and the history of dark urine, oliguria, and then later on some of the laboratory findings. We have in addition a story that is quite atypical of any sort of neurologic disturbance usually associated with nephritis, but which may be seen following thrombosis of the middle cerebral artery. The suggestion of enlargement of the heart, the decrescendo,

*From the Department of Pathology and Medicine, Vanderbilt University School of Medicine, Nashville, Tenn.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

VA Offering Increased Fees to Physicians in Home Town Care Program

● The Veterans Administration is offering increased fees to physicians under the Hometown Care Program in Tennessee, and during the current fiscal year, will spend in excess of one-half million dollars more on this operation in the United States. The VA already has reached agreements in a number of states and are in process of negotiating in many others, including Tennessee.

Committee Meets

● Representatives of the Committee on Governmental Medical Services met with representatives of the Veterans Administration in Nashville on August 25th to begin preliminary discussion in the revision of the fee schedule. Some progress was made in these negotiations. It was reported that slightly under \$10,000 per month is being paid to Tennessee physicians caring for veterans under the VA Home Town Care Program. Some 800 Tennessee physicians participate in the program with between 300 to 400 of this number doing the majority of the work. The meeting was presided over by Dr. Ernest G. Kelly of Memphis, Chairman.

TSMA Adopts Policy On Asiatic Influenza

● The Tennessee State Medical Association has adopted a policy for any possible epidemic of Asiatic Flu. Through the Board of Trustees, the Association's policy has been announced and sent to secretaries of all county medical societies, urging county societies to formulate plans for the mobilization of all health resources at the community level in the event of such an outbreak. The policy states that the Association "foresees no reason for alarm on the part of the public."

Recommendations

● Recommendations of TSMA are: (1) Immediate action to identify and report all prospective cases of the Asiatic flu to county health departments. (2) Coordination of local programs with public health agencies and local health departments. (3) Dissemination of information to the public about the disease, avoiding "the scare" approach. (4) Consideration of the possible adverse effect on business industry and vital community activity in making all control decisions. (5) Concentration on the age groups most likely to suffer complications from the disease.

Urge Action Now

● TSMA stresses the importance of each county medical society establishing a committee immediately to put into effect such plans for epidemic control as may be necessary. TSMA recognizes the present shortage of vaccine and states that sizeable supplies will not be available until the first of the year.

Doctor, We Need Your Opinion

● For the purpose of continuous improvement of your STATE MEDICAL JOURNAL in reading content—original articles—editorials—economics and other subjects, it is urgently requested that you complete the form entitled "Doctor, We Need Your Opinion" as mailed to each member of the Association,

**Better Discuss This
With Your Insurance
Adviser or Attorney**

or the form which is included in this issue of the JOURNAL. Your response to the questionnaire will be most helpful.

● U. S. Tax Court rendered a decision recently in a case involving a physician which decision probably will be of interest to other physicians—at least you should have your insurance representative or attorney look into the situation.

The Tax Court said that disability insurance premiums do not qualify as a business expense and are therefore not deductible. The doctor took out three policies which were to pay him specified amounts if he became disabled or ill. He intended to use funds to pay his office expenses, but was not bound to do so.

The Tax Court held that the policies were designed to compensate the doctor for a disability and not to reimburse him for business overhead expenses during disability; were personal in nature; premiums were not ordinary and necessary business expenses; doctor's intention to use proceeds to pay such expenses did not mean that they had to be used for that; disability policies cover loss of earnings and can be applied toward living expenses as well as anything else that the taxpayer wants.

It is presumed that the premiums would be deductible if the terms of the policy would limit application of the proceeds to payments of business expenses—in other words business overhead expense insurance. It is something worth your attention.

**Much About Medicare
Still Mis-understood**

● The Department of the Army is interested in the need for greater emphasis being placed on informing physicians as to the nature of the Dependents' Medical Care Program and the scope of care which is payable by the Government under its provisions. The program is primarily an in-hospitalization program and includes limited coverage for out-patient type care. There has been considerable consternation displayed when a claim has been disallowed for a tonsillectomy performed in a clinic, in a physician's office or in the emergency room of the hospital when that patient is not an in-patient.

The program provides "free choice of physician" and also the right of physicians to choose patients. Any physician can participate in the program, and the contract reserves the right of any physician to decline to participate or to refuse any individual case without stating a reason therefor.

If you do not have a copy of the "Doctors Manual for Medicare" mailed to each member of the Tennessee State Medical Association, as well as a copy of the fee schedule, you should contact the fiscal administrator, the Tennessee Hospital Service Association, Blue Cross Building, Chattanooga, Tennessee, or notify your State Medical Association office.

**CONTRIBUTE NOW TO THE AMERICAN MEDICAL
EDUCATION FOUNDATION**

Public Service

THE TENNESSEE TEN

Tennessee Doctors Attend AMA Public Relations Institute

● The Tennessee State Medical Association was well represented at the AMA's annual Public Relations Institute in Chicago August 27 and 28. The five doctors in attendance were A. B. Scoville, Jr., Nashville, Public Service Committee Chairman; W. O. Vaughan, President, Nashville Academy of Medicine; John H. Burkhart, Knoxville, Public Service Committee member; H. L. Monroe, Erwin, Public Service Committee member; and Gene Kistler, President, Hamilton County Medical Society. Others from Tennessee included Jack Ballentine, TSMA Executive Secretary; Jack Drury, Executive Secretary, Nashville Academy; Les Adams, Executive Secretary, Memphis-Shelby County Society; and Jack Drake, TSMA Public Service Director.

Press Relations Emphasized

● The importance of maintaining good working relationship with the press was emphasized at one of the panel discussion sessions. Leading medical science news writers and physicians prominent in the field of medical public relations agreed that harmony between the profession and the media must be developed and nurtured on the county society level. Examples were cited of disagreements between the local society and the press which were resolved by across-the-table meetings, with the result that each group better understood the problems of the other.

Other important subjects covered included grievances, legislation, and professional liability.

The afternoon session of the first day saw the conference split into groups according to the size of the society the individuals represented. Dr. Burkhart was chairman of a panel on "County Societies without Executive Secretaries."

The meeting concluded with the showing of a new film, "Whitehall-4-1500," produced by AMA to explain to the public the services and benefits provided by organized medicine. The 30-minute sound-color film is available on loan to county societies for showing at civic clubs and other groups.

Locally Identified Film Spot Announcements Available

● AMA also displayed a series of filmed 20-second spot announcements for television, on which the county society sponsoring the announcement is identified, audio and video-wise. These film clips are offered the county societies without charge. Further details may be obtained from the TSMA Public Service Office.

—o—

Asian Flu Vaccine In Short Supply

● Information received by the Public Service Office reveals that Asian flu vaccine will be in short supply for most of the fall season, if demand for the vaccine measures up to expectations. However, it is reported that by February of next year, some sixty-million doses of the vaccine will have been manufactured by the six pharmaceutical houses producing the vaccine. Individual physicians have been recently re-

ceiving complimentary doses of the vaccine with which to vaccinate themselves and one member of their office staff. The AMA JOURNAL will publish weekly reports on the incidence of the disease and the amount of vaccine available.

—o—

**Madison County
Polio Program
Successful**

● A polio immunization program, conducted by the Jackson Medical Society, the Jaycettes (wives of members of the Junior Chamber of Commerce) the Public Health Department and the County Polio Chapter resulted in the inoculation of 1,500 persons, according to Mrs. W. R. Drake, Jaycette project chairman. The Medical Society agreed to furnish a doctor for each clinic; and a clinic was defined as a group of twenty or more persons desiring to take shots. Mrs. Drake contacted business firms, industries, clubs, and other organizations and made the necessary arrangements. The Public Health Department furnished a nurse to be in attendance at each clinic, and the local polio chapter supplied \$500 to pay for materials, serum for indigents, and other incidentals. The "Attack" was backed by an all-out publicity campaign through newspapers, radio, and TV. In addition, posters were displayed in local stores and business firms promoting the clinics.

—o—

**"Students" Enroll
For Medical
Assistants Course**

● At press time, more than 170 applications for the Medical Assistants Public Relations and Office Procedure Course had been received in the Public Service Office. The four-week course is being sponsored jointly by the Public Service Office, the Nashville Academy, and the Nashville Chapter of the Medical Assistants Society. Invitations to enroll their assistants in the course have been sent to doctors in Davidson County and the seven counties which are adjoining. Instructors include physicians and laymen who are well qualified by virtue of their experience and positions. Eleven subjects will be presented in the first three two-hour sessions. The last meeting will be a banquet, with a critique and presentation of certificates of completion.

—o—

**Dr. Duncan to
Represent TSMA at
Legislative Hearing**

● Dr. George E. Duncan, Nashville, will represent TSMA at a hearing of the Tennessee Legislative Council Committee September 10 relative to a proposal that the legislature enact a law requiring a medical examination in case of deaths which occur without a physician in attendance. Dr. Duncan worked closely with the Nashville Academy in drafting a private act which set up the medical examiner system for Davidson County. The legislative committee will decide whether to recommend to the legislature that it enact the measure as a general, or state-wide law.

—o—

**Jesse Ford
To Return
To Tennessee**

● Jesse H. Ford, Jr., former TSMA Public Service Director, returns to Tennessee October 1. Ford, now a staff member of AMA's Public Relations Department, has been granted a fellowship by the Commonwealth Foundation to complete work on a novel. He and Mrs. Ford will make their home in Humboldt.

JACK DRAKE
Public Service Director

diastolic murmur in the left pulmonary space at first suggests to me an aortic valvular lesion. A systolic component or accentuation in systole would cause one to suspect one of the congenital lesions such as a patent ductus or interventricular septal defect or conceivably interatrial defect, but with a pure diastolic decrescendo murmur, in that location, cardiac enlargement, it seems most probable to me that we are dealing with *aortic valvular disease*. There was also a thrombophlebitis, apparently. At least some lesion in the right lower leg.)

Laboratory Data: Several urinalyses showed a specific gravity of 1.010 to 1.020. (That, to me, is suggestive of some fixation of the specific gravity, and in view of the history of oliguria preceding I would say this may well be a resolving acute renal insufficiency.) There was 2 to 4 plus protein, no sugar, numerous red cells, white cells and frequent hyaline and granular casts. The blood count was 8,700, with 80% segmented forms and eosinophiles 5.5 per cent. He had a skin rash. (In scarlet fever, for example, eosinophilia is common. In a variety of skin diseases with destruction of the epidermis eosinophilia may occur.) Lymphocytes 11.5 % and monocytes 3 per cent. Hgb. 10.5 Gm. Packed cell was volume 34. Sedimentation rate corrected was 23; platelet count was 282,000. NPN, CO₂, sodium, chloride, bilirubin, clotting time, bleeding time, clot retraction, venous pressure and circulation time were all normal. (This is a series of rather crucial observations within normal limits. The NPN might have been expected to be elevated in this man with edema, hypertension and a history consistent with nephritis. The CO₂, sodium and chloride might have been abnormal if he were in uremia with some acidosis. With carbon tetrachloride poisoning we would expect elevation of the bilirubin. In my experience I have not seen severe carbon tetrachloride poisoning in the absence of some degree of jaundice. Clotting and bleeding time and tourniquet tests with clot retraction within normal limits tend to exclude a number of the vascular diseases associated with clotting and thrombosis and hemorrhage, which might account for some of the various findings we have in this case.) The serum protein was 4 Gm. per cent with 1.8 Gm. of albumin and 2.2 Gm. of globulin. Potassium was 5.5 meq./L which is on the high side; probably normal, I suppose. Serum calcium 7.3 mg., significantly low. Phosphorus 7.3 mg. per cent is elevated and the alkaline phosphatase not very remarkable. Cholesterol was somewhat elevated, 310 mg. per cent. Antistreptolysin titer was 123 units. NPN on the 16h hospital day, about two days before death, was 61 mg. per cent. (This is the kind of finding which is difficult to interpret. Many times patients will have some increase in their NPN, which may be based on dehydration or factors associated with such things as congestive failure and a variety of other causes. This would lead us to suspect there may be something wrong with the kidney, but it is not very defini-

tive.) One L.E. preparation was negative. (Is that with the new method of spinning the sample in a tube, or is that the old one?—The test was done by the older procedure. The new method is more precise, it develops some tests which might be negative by the older procedure. The negative report does not necessarily exclude the diagnosis of lupus.)

A few streptococci were isolated from this patient and his ASO titer was low. (Could he have had streptococcal infection? In a published report it was found that doses of penicillin once a day, at 200,000 units for four, five or six days depressed the antistreptolysin pattern which formed somewhat, but in this group several doses of penicillin were given. I would not expect one dose of penicillin, even though it were beneficial, to interfere appreciably with the antistreptolysin pattern in response to an infection. If this test is right, it is fairly strong evidence against a severe or significant streptococcus infection in this man's throat a few weeks before.) Throat cultures showed a few colonies of hemolytic streptococci. Three blood cultures were negative. Sputum cultures showed *Staphylococcus aureus*. (Probably it is worthwhile to talk about the terminology of staphylococci here. The aureus obviously had a yellow pigmentation; often these organisms are coagulase positive. Those that are white, or albus strains, are less frequently coagulase positive, though they may be. We have seen a throat culture show simultaneously white and yellow staphylococci which on phage typing were found to be identical with each other. This, therefore, is not very helpful information. One other "gimmick" of the laboratory about staphylococci is that all beta hemolytic streptococci are not group A streptococci. Some enterococci show beta hemolysis and I know of cases of disease caused by these beta hemolytic enterococci which upset people because they do not respond to penicillin. I have seen a patient at the Veteran's Hospital recently who had persistent beta hemolytic streptococci in his throat, which was considered to be penicillin resistant Group A strain. But examination showed that these were actually enterococci with this characteristic. These organisms are not associated with rheumatic fever or glomerulonephritis, as far as I know, and therefore are not the object of much concern.

Lumbar puncture showed an opening pressure of 220, a protein of 29 mg. per cent, sugar 42 mg. per cent. 125 red cells/cu. mm. (I would like to ask Dr. White if this fluid was xanthochromic and if the protein analysis was made after spinning the specimen. [It was a clear fluid.] I am tempted to think these 125 red cells are traumatic in origin, an occurrence which is very frequent with this procedure. On the other hand, it might be indicative of some vascular lesion in the subarachnoid space which means that bleeding could have been there for awhile, a matter of a few hours or a few days. It is also possible to examine a tube in an artificial light and miss xantho-

chromia because of the yellowness of the artificial light. This point in retrospect become important.) The Wassermann test was negative. Skin biopsy showed chronic inflammation of the skin. Chest x-ray showed a cardiac-thoracic ratio of 15-29 cm. as well as haziness over the left hemithorax suggesting pleural reaction which improved one week later.

EKG shows a depressed ST segment. While in the hospital the patient was afebrile, except for one temperature reading of 100° on the fifth hospital day, and one of 101° on the eighth day. On the second hospital day he became dyspneic but examination of his lungs was normal. He was digitalized and received Aureomycin because of the streptococci in his throat. He complained of recurrent pain in the left anterior chest on the seventh, eighth and ninth days, at which time examination of the chest showed decreased breath sounds over the left lower lobe. (I presume that is consistent with the x-ray signs.) He continued to have nausea and vomiting with right frontal headaches for the first week. On the twelfth hospital day some petechiae were noted on the skin, buccal mucosa and conjunctivae. (One question that is always asked but is very rarely helpful, but something you should know as students, is did these petechiae contain white centers. Petechiae of bacterial endocarditis, for example, have been described to contain white centers, representing the embolic material such as platelet thrombi with bacteria. The petechiae of hemorrhagic disorders may just simply be little blood spots beneath the skin. It was believed that the skin lesions were secondarily infected. I do not believe this refers to the petechiae, but to the rash which was present. Perhaps 90 per cent or more cases of glomerulonephritis are identified with streptococcal infection. In the literature we find examples of glomerulonephritis occurring after various kinds of pyogenic infection. In 1918, Dr. Blake described some cases of pneumococcal pneumonia followed in the recovery period by glomerulonephritis. In an article on scabies one textbook points out that glomerulonephritis may occur following a secondary infection of severe scabies. The severity of this infection is a little in doubt in my mind. Secondarily infected scabies is a very prominent thing, appearing like impetigo. That's the kind I would expect trouble from.)

The thrombophlebitis in the left leg,—I considered very much the possibility that this may have been a cellulitis with involvement of the vein. I think that is a good possibility as a source for thrombophlebitis. Is there any important information about the skin lesions?

He continued to be asymptomatic until the seventeenth hospital day, when he had a generalized convulsion and became cyanotic.

This leaves us with a host of findings, all of which lead me to arrive at one or two diagnoses which have attracted me very much. I have listed about ten differential diagnoses which I would like to read to you. First, I can't escape the feeling and the definite impression that this man had nephritis, of the type that is characteristically described as glomerulonephritis. He had, I believe, hypertension; I will assume that it was transient hypertension. Perhaps it was persistent. I believe in a 19 year old boy that this was probably not his first bout of nephritis. The odds might be that he was having a recurrent episode; apparently recurrent episodes of glomerulonephritis are set off by more trivial stimuli and may not be always due to streptococcal infection. This man's disease could either have followed an infection with a streptococcus or might have followed a secondary skin infection such as scabies. His calcium was low; his phosphate was high; his albumin was depleted and constitutes evidence of impaired renal function. The chlorides and sodium were not remarkable. The potassium may have been elevated to the upper limit of normal, because of the continued exogenous intake of potassium and perhaps some limitation of excretion. It is not a very severe picture of abnormal renal function, but I suspect that this man, had he had tests of renal function,—dyes and that sort of thing,—we could have measured some abnormality, some insufficiency of function. The history is perfectly clear that he did have a renal lesion; that is, oliguria and dark urine, hematuria, casts in the urine. All these things fit very well into the diagnosis of nephritis of an inflammatory sort which I will refer to henceforth as a glomerulonephritis.

Another diagnosis which we should consider has to do with carbon tetrachloride. The absence of any liver involvement that we can detect,—that is, the absence of jaundice specifically provides to me very strong evidence that this man did not have carbon tetrachloride poisoning of any significant amount, although it might have contributed to a renal lesion from other causes. Carbon tetrachloride interferes with vitamin K absorption and may result in a bleeding ten-

dency as a result of prothrombin deficiency. That may have accounted for the petechiae, but I do not believe we can support that diagnosis very well.

Syphilis involving the aortic valve is infrequent at this age. Meningeal syphilis might have occurred, but the disease is not usually as unremitting as far as neurologic findings are concerned. I think that even one dose of penicillin, even if it were a case of syphilis, would show some temporary alleviation. I do not believe that syphilis is an important cause of this man's disease.

Other diseases which may involve the kidneys, heart and the central nervous system are the collagen diseases, especially periarteritis. We still have eosinophiles. I did not think this man had lupus or periarteritis. Dr. Sproffkin had an interesting report in the Archives of Internal Medicine, in which he reported 18 cases of hemiplegia in young people. One of these had lupus, one had thrombotic thrombopenic purpura, a disease which I considered here, but which I have not enough evidence to support. He mentions one case of subacute bacterial endocarditis with hemiplegia.

Now, pyelonephritis does not seem to have a basis in this patient; infectious diseases, a possibility that is quite remote. I believe we had in this man a nephritic lesion, or at least a renal lesion resembling nephritis, some kind of cardiac enlargement, hypertension, a very distinctive cardiac finding of a decrescendo diastolic murmur in the third interspace which I believe represents an aortic valvular disease. We have a pleural reaction which may have been of embolic origin with pulmonary infarction,—that would indicate to me a lesion on the right side of the heart or in the venous system. He has hematuria which may represent kidney infarcts. We cannot examine the abdomen very well—he is tender, and may well have an enlarged liver and spleen, or he may not. But we have diseases of the central nervous system which might be explained on the basis of emboli to the brain, hemiplegia, and later the terminal episode which might be a massive embolization. The pleural findings at first thought might suggest a hepatic infarct with pleural irritation, but certainly it is so high up in the chest

that it seems less probable. One could contemplate the possibility of paradoxical embolization to account for the right or left circuit emboli. I think a more plausible explanation might be emboli arising in the heart, and since the only lesion for which we now have any evidence in the heart is in the region of the aortic valve. I can explain the left-sided neurologic lesion and the possible kidney lesion on the basis of emboli arising in the left side of the heart. I cannot explain the one in the lung, but that is not too surprising a situation. Mycotic aneurysms account for a variety of bizarre and interesting phenomena and some of these may have occurred here. Let's see if I have missed any other heart findings. A patent ductus to me is an outside possibility because of the absence of a systolic accentuation of a murmur. Lupus endocarditis and rheumatic fever seem improbable, although small emboli may be discharged from the heart of patients with both of these diseases. Now, the duration of this man's disease was brief, if the history is correct, and that to me is a great "stunner." Secondly, he had little fever, and this only for one or two days. The fact that bacterial endocarditis did not run its full extent in a few weeks makes one wonder if this man's illness had been longer than the history suggests, but on admission he was described as well-nourished. The absence of fever, the short duration of the disease are rather strong points against the diagnosis of subacute bacterial endocarditis. Very few patients are afebrile with endocarditis, nor with lupus, periarteritis, thrombitis, purpura—thrombopenic purpura. Acute bacterial endocarditis might have developed in this situation but could run a more rapid course. And in cardiac failure, patients with subacute bacterial endocarditis may have absolutely an afebrile course to death. This man did not develop congestive failure as we can determine in this report. Uremia certainly was not a very prominent thing with an NPN of only 61 mg. per cent. His course was terminated prematurely by this accident so that he never developed the full picture of subacute bacterial endocarditis as we would customarily think of it. That seems to me to be the easiest way out, if that diagnosis is to be entertained seriously.

Although I think the renal function may have been disturbed, I do not think that was the limiting factor. We did not find the other things to go with it.

So if I were to try to present to you my opinion of the final event or the cause of this man's death I think there can be little doubt that it was nephritis; I believe it to be of an inflammatory type, that which is best described as *glomerulonephritis*. Probably not the original episode,—he had a hypertension that was relatively persistent as far as an acute case of nephritis is concerned, if we can assume he had hypertension from the onset of dark urine, suggesting to me a previous episode and the fairly considerable severity of it.

What about nephritis in relation to subacute bacterial endocarditis? Well, it is entirely possible that there are at least three kinds of nephritis that have been described in the presence of subacute bacterial endocarditis, one of them being a disease indistinguishable from *glomerulonephritis*. In cases of long duration this picture becomes increasingly prominent. We do not see these anymore, because they are treated too soon. Actually, that is a severe criticism of this case from my point of view. We have a very prominent nephritis and not so prominent subacute bacterial endocarditis. Now I am more impressed by the nephritis than I am by the other possibility. My chief reason for bringing in a diagnosis like subacute bacterial endocarditis is to link the central nervous system disease with the kidney, plus the fact that he has a heart murmur that is quite striking. I suspect that this man, a young man of 19, with a very prominent aortic murmur, may well have had a bicuspid aortic valve as an explanation for it. A rheumatic valvular disease would be possible in this patient, but we have no history of rheumatism, and apparently he was a reasonably good historian when he was first questioned. So the hemiplegia is, to me, clear. I would put that hemiplegia and the terminal episode on the basis of embolization. I think he probably had thrombophlebitis in his leg. The other vascular diseases, lupus, periarteritis and the like are not supported by enough evidence.

DR. JOHN SHAPIRO: We may start out by saying that we did not detect any anatomic evidence of carbon tetrachloride poisoning in this individual. I think probably if he had such intoxication the lesions in the liver and kidney would have been entirely characteristic.

The findings at autopsy and microscopic examination in this case fall into two general groups, and I think that to the best of our knowledge at the present time they are not necessarily related. As far as the immediate cause of death is concerned I believe we can demonstrate this very nicely with this section of the carotid artery.

The internal carotid artery, and the very nice microscopic preparation of the carotid artery running longitudinally demonstrate at the point of bifurcation a hyaline mass which, as you can see, has tended to enlarge the lumen of this vessel. This represents an occluding embolus. There were large vegetations on the mitral valve. In addition to the vegetations on the mitral valve, the cusps of the aortic valve were deformed. I believe the likelihood is that these in the past have undergone the ravages of rheumatic fever. Superimposed we again see this granular, friable mass. Note there are no large projecting papillations; this is a valid vegetation of a very warty sort. This is not the usual lesion of rheumatic fever as you well know. Rheumatic lesions tend to be smaller, tend to be discrete, and tend to occur in a very particular location. So this is an atypical warty type of endocarditis. This particular section we are showing now is from a vegetation on the mitral valve. The thrombus is on the valve margin, and is intimately adherent to it. It is not the type vegetation we associate with the Libman-Sacks type of endocarditis; these vegetations ordinarily will be much more diffuse and not tend to be as papillary as this particular one. Ordinarily, with acute or subacute bacterial endocarditis, we expect to see bacteria, and we also expect to see clumps of leukocytes. Such are not found in the present case. There is intimate attachment to the mitral valve leaflet and the disruption of the continuity here. Cultures were made of this vegetation, but did not grow any organisms, and you can see

there is no evidence of bacterial colony formation. Impacted in numerous vessels in the myocardium were hyaline thrombi some of which appeared to be quite old.

Embolization had taken place here throughout the systematic circulation. In a cross section of the spleen you see these quite typical anemic or bland types of infarction and these appear to be of varying ages.

Each kidney was quite enlarged; each weighed, I think, 325 Gm. The increase in size is due mainly to cortical swelling. Striations persisted and the pyramids were well-preserved. There were bilateral infarcts and the glomerular changes of chronic and subacute glomerulonephritis microscopically.

So we can give this man, I think, a diagnosis of chronic glomerulonephritis with the good possibility that he has had, as Dr. Knight speculated, previous episodes of acute glomerulonephritis. In addition, he was the victim of an accident, a thrombosis of the mitral and aortic valve of an atypical sort and the immediate cause of death certainly was related to this thrombosis of the valves. The valvular thromboses do not fit into the categories of those ordinarily described or talked about. We can classify the valvular thrombosis here as atypical and thrombotic and non-bacterial. There are two groups of such atypical endocarditis cases of the nonbacterial sort, and I think you are familiar with the group ordinarily associated with disseminated lupus. Then we have the kind

shown by this patient which may occur in association with numerous debilitating diseases. We are not sure as to the etiology in this particular case, but the thrombosis seems to occur on valves which have been the site of previous rheumatic involvement. We do not have a direct cause for such thromboses but this condition has been recognized intermittently since about 1936. Dr. White just called my attention to a group of some 78 cases reported in the *Annals of Internal Medicine* this month of which 14 of these individuals had suffered from severe embolic phenomena, and I think this particular case would fall into that group.

Diagnoses

- 1) Embolic occlusion of right internal carotid artery
- 2) Non-bacterial thrombotic endocarditis involving mitral and aortic valves
- 3) ? Old rheumatic deformities of mitral and aortic valves
- 4) Chronic and sub-acute glomerulonephritis
- 5) Multiple infarcts of spleen, kidney and brain

References

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2. R. A. McDonald and S. L. Robbins: The Significance of Nonbacterial Thrombotic Endocarditis, *Ann. Int. Med.* 46: 255, 1957.

Diabetes Mellitus in a 67-day old Infant. D. C. Chambers, M.D., P. Watt, M.D. and K. A. Smith, M. D. J.A.M.A. 164: 970-71, June 20, 1957.

Because of the rarity of diabetes in infancy, a case of diabetes mellitus in a 67-day old infant is reported. There was no family history of diabetes. The infant entered the hospital in coma, which was controlled rapidly with the use of insulin and intravenous fluids. The subsequent

course has been satisfactory and the infant has been controlled by diet and protamine zinc insulin daily. It has been estimated that from 5 to 8% of all cases of diabetes mellitus occur in children. This incidence decreases with decreasing age, but diabetic acidosis as a cause of coma in infants must be considered in differential diagnosis. (Abstracted for the Tennessee Diabetes Association by Charles A. Rosenberg, M.D., Memphis.)

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President's Letter

REFLECTIONS UPON TENNESSEE PLAN OF PREPAID HOSPITAL INSURANCE AND SURGICAL BENEFITS



J. PAUL BAIRD

and objectionable features of the Tennessee plan. It has become apparent after nine years that certain changes will necessarily have to be made to remove some of the objectionable features and to conform to a changed economic pattern since its inception.

There will probably be a called meeting of the House of Delegates this fall devoted entirely to consideration of this problem and it should be settled as a matter of orderly business. We should therefore, in our Component Societies, organize our thinking, let the heat of discussion burn down, consider the basic facts and send our delegates instructed to this meeting. We should not have a repetition of indecision and divided vote which accomplished nothing in the House last April.

In consideration of the Plan, let us all do some thinking on some of the basic concepts which now prevail and upon some of the proposed changes.

(1) It is important to continue any plan or policy endorsed by the Society to provide care under a voluntary prepaid hospitalization insurance with surgical benefits? Has such a plan as originally adopted fulfilled its purpose and at present needed?

(2) If some basic plan for low income group should be continued, at a level of \$3,600 to \$3,800 approximately, as a matter of good public relations what can we do to encourage greater participation among the general surgeons and specialty groups. Currently about 55% of these do not participate, not due to the low fee schedule, for it is obvious at this level that a greater fee could not be paid, but because the idea of a third party setting a fee schedule has

never been acceptable.

(3) What is the prevailing opinion or majority recommendation of your Society in regard to the coverage by multiple insurance policies in this group under the present plan? Can this feature be retained and expect physicians to participate?

(4) What is the opinion of your Society in enlarging the scope of this plan to provide a second plan, or type B plan, to cover the income group up to \$5,000 annual income? This provides for greater hospital coverage and an increased fee schedule and is certain to be presented either as a majority or a minority recommendation of your Committee.

(5) Is it an essential part of such plan or policy to attempt to set a fee schedule for surgical benefits if a plan is adopted? Would it not accomplish the same purpose if the Society sponsored a straight hospitalization plan in the lower income group and leave the matter of fees to be settled between the patient and the physician?

The answers to these questions should be sought by free discussion in the Component Societies during the next two months.

My conclusions, after discussing these matters with various doctors from the State at large, are rather generalized, but it is my prejudiced belief that:

- (1) The Association should continue a policy of sponsoring a plan for low income groups under a \$3,800 approximate level,
- (2) A greater percentage of participants would actively support it if no fee schedule was set,
- (3) That multiple insurance coverage should be dropped,
- (4) That extension of the plan to cover the income group from approximately \$3,800 to \$5,000 will compound the confusion that now exists, and
- (5) Administration would be facilitated with less controversy if no fee schedule whatsoever was adopted.

Paul Baird

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SEPTEMBER, 1957

EDITORIAL

BED REST FOR TUBERCULOSIS

For many years the "sheet-anchor" in the treatment of active pulmonary tuberculosis has been complete bed-rest. The benefit has been ascribed to various mechanisms. That there is an anabolic benefit derived from bed-rest, high caloric feedings and peace of mind, cannot be doubted. There has been some difference of opinion relative to the influence of bed-rest on the blood supply to the lungs, particularly to the apical areas. It has been suggested that this posture promotes the blood flow into the upper lobes of the lung. Most observers feel that this improved blood supply should promote healing of the involved areas. There are some who disagree and think

that the increased blood supply can be detrimental by actually bringing more tubercle bacilli into this region of the lung. Be that as it may, bed-rest has been an accepted part of the treatment of active pulmonary tuberculosis.

Since there has been introduced into the methods of treatment several chemical agents and streptomycin, as well as the practice of surgical excision of isolated tuberculous areas, the role of complete bed-rest has been de-emphasized.

With this question in mind Husch and his collaborators, working at the Rockefeller Institute for Medical Research, have recently published an interesting report.¹ They selected twenty-one adult females with advanced pulmonary tuberculosis thought to be of recent origin. None had been treated before for this infection. There was first a preliminary period of observation, usually about a week, during which the case was evaluated from the standpoint of diagnosis and extent of the disease. The treatment routinely employed was as follows: streptomycin sulfate, 1 Gm., intramuscularly, three times a week, and isoniazid, 5 mg. per Kg of body weight daily. In some patients who developed drug resistance paraminosalicylic acid was substituted or added. No collapse or surgical therapy was used. The treatment was then divided into phases of four weeks of bed-rest alternating with four weeks of rather full activity. In this way each patient served as her own control and test subject. In addition to the routine daily physical examinations and observations on the pulse and temperature, repeated observations were made of the sedimentation rates, C-reactive protein, staining of sputum and material obtained by gastric lavage, cultures for tubercle bacilli, x-ray studies of the chest, Middlebrook-Dubos hemolysin tests, weight, and general well-being. In addition, constant studies alert were made for the possible development of resistant bacilli. The periods of activity were all completely standardized as were the periods of bed-rest. The one variable in the overall treatment schedule was bed-rest as compared with physical activity.

(1) Husch, James G., Schoedler, R. W., Pierce, C. H., and I. Maclean Smith: A Study Comparing the Effects of Bed-rest and Physical Activity on Recovery from Pulmonary Tuberculosis, *Am. Rev. Tuberc.* 75:359, 1957.

The conclusion reached was that there was no evident benefit from complete bed-rest, or as the authors style it, there was no detectable harmful effect of physical activity on the course of recovery of relatively fresh, advanced pulmonary tuberculosis.

The authors do not draw the conclusion that home treatment of active tuberculosis is indicated. It is obvious also that a series of only twenty-one cases does not lend itself to any considerable statistical gymnastics. However, the reputation, that has been established at the Rockefeller Institute during the past many years, for the careful investigation of a given problem presented by a particular disease, makes one read this article with respectful interest.

A. W.



ASIATIC INFLUENZA

At the urgent suggestion of the American Medical Association the officers of the Tennessee State Medical Association have established a policy on this subject to meet an emergency should such arise, as in the event of a widespread pandemic. This statement was sent to all secretaries of county medical societies and a release was prepared for the press. The full statement of this policy appears in this issue of the JOURNAL as a Special Item following this editorial comment.

It seems possible and even probable that this new strain of the influenza virus will invade the Western Hemisphere for it has appeared in scattered epidemics in Europe and seems to have been recognized on our Pacific seaboard.

Already some of the civilian population have become panicky at the prospects of a pandemic and this is aided by news stories of the disease as it is appearing at spots on the globe. The very term "Asiatic" has a mysterious and foreboding connotation. The members of the medical profession especially must use their influence to prevent the confusion and hysteria which are sure to appear if an epidemic, leave alone a pandemic, should develop in this Country.

We as physicians can assume a quieting confidence in this regard to allay the fears

of the public, if we use our knowledge and judgment. And we can assume such an attitude based on available knowledge.

In the first place, though this strain of influenza virus has been known to have been disseminated since April, 1957, it fortunately to this date has not shown any tendency to increase its virulence with rapid passage through human hosts. Furthermore, the mortality rate has been low, deaths being limited to the debilitated, the old, and the very young. Though no age seems to be immune to the infection, and though it is prostrating for a matter of a few days, the public should be reassured on all these points, particularly if they recall the 1918 pandemic.

In 1918, similarly, the patient suffering from uncomplicated influenza had pretty much the same course as the current infection. However, the death rate was enhanced by the secondary infections, especially those of streptococcal origin, as pneumonia and the common complication of empyema. Here lay the major cause of death. In this era of antibiotics the doctors can face an influenza epidemic with a greater equanimity insofar as the bacterial complications are concerned.

There is great demand for the vaccine but it seems unlikely that the quantities necessary to inoculate most of the population will be available before an epidemic may appear. Therefore it is urged that doctors immunize in the main, and at least first, those most likely to develop complications which may be fatal. These facts will need to be explained to the public.

The reader of the statement of policy will also find that the committee has urged that county societies and hospital staffs be ready to act in an organized way if an epidemic should strike. Those who recall 1918 will recognize the needs of caring for great numbers of persons, not only in hospital or makeshift hospitals which are rapidly filled, but also in homes where every member of the family may be ill. This will take organization for medical and nursing care, and last but not least it will take organization to utilize available stores of antibiotics to the best advantage.

The officers of the Association hope that all will read the Statement of Policy.

Special Item

Asiatic Influenza

(A statement by the Executive Committee of the Board of Directors, Tennessee State Medical Association.)

The American Medical Association has urged its component societies to have standby plans and precautionary measures in readiness if an outbreak of Asiatic influenza occurs in the United States. Because of the probability that such an epidemic may occur the following has been compiled for the information and guidance of the medical profession of the State of Tennessee.

I. Introduction

The first reports of an epidemic of influenza were received from Hong Kong and Singapore in April 1957 and the disease spread rapidly through the Orient involving Taiwan, the Philippines, the Malayan States, Indonesia, Japan and India. There have been reports of cases among U. S. military personnel in the Far East and a number of sharp outbreaks have also been reported aboard commercial and U. S. Naval vessels. In recent weeks there have been some cases reported from states bordering on the Pacific and also some cases have been reported in Europe.

II. Clinical Picture

The symptoms are those typical of all types of influenza. The onset is sudden with the appearance of coryza, malaise, headaches, cough, fever up to 104°, muscular aches and prostration. The normal duration of illness is 3 to 5 days followed by 24 hours of systematic fatigue. The patient can expect resumption of his usual activity in a week. It should be emphasized, of course, that all of the symptoms will not appear in all of the cases. Practically all cases, so far reported, have been relatively mild and no different than outbreaks of influenza which have occurred in previous years.

III. Incidence and Mortality

It is difficult at this time to predict the attack rate and mortality rate. It is unwise to compare conditions in the Far East where overcrowding, malnutrition, insufficient sanitation, inadequate medical care, and

presence of other human diseases are prevalent, with the situation in the United States. In like manner the appearance of the disease among United States military personnel cannot be used, without modification, in forecasting probable effects among civilian communities and personnel as factors such as earlier immunization of military personnel with influenza vaccine, strict military control, regular sick calls, ready availability of medical and hospital care have their influence on the disease. Nevertheless these two groups, civilian and military personnel, in the Far East are the only guides currently available. In general the attack rate has been about 15-20 per cent of the population in the affected countries. With the present hygienic standards in Tennessee as compared with Oriental countries and with a relatively healthy population, it seems reasonable to assume that the attack rate will be no higher and probably will be lower than the reported 15-20 per cent. The mortality rate has been low and of greater importance is the fact that the virus does not seem to have increased in virulence as it has passed through contiguous population groups. Complications have been rare except in the very young, the old and the debilitated. In the present age of antibiotics and chemotherapy, the dreaded complications associated with Pandemic influenza in 1918-19 should be controlled.

IV. Summary of Epidemic

A brief summary of the influenza epidemic characteristics includes:

- (a) Infective agent—a virus from a new antigenic family of Type A virus.
- (b) Incubation period—probably 1-2 days.
- (c) Incidence—variable, figures not entirely reliable—15-20%.
- (d) Contagious period—uncertain, 1-5 days.
- (e) Transmission—droplet infection.
- (f) Symptoms—fever, prostration, headache, lassitude.
- (g) Signs—coryza.
- (h) Course—generally short duration, 3-5 days.
- (i) Complications—rare, not serious except in the very young, old or those debilitated.
- (j) Treatment—no specific therapy, usu-

ally symptomatic; antibiotics of little value; good nursing care.

(k) Mortality—figures unreliable, probably quite low, except in the young, old, or those debilitated.

V. Alternate Courses Epidemic May Take

Based on presently available information it appears that should an epidemic break out in the United States, it would take one of the following alternate courses:

(1) Few sporadic outbreaks this summer but disappearing without large scale epidemic;

(2) Explosive outbreak of influenza in the summer of 1957 (before September 1) with same attack rate and mortality rate as currently exists;

(3) Few sporadic outbreaks this summer with explosive outbreak in fall or winter of 1957 (after September 1) with same attack rate and mortality rate as currently exists;

(4) Explosive outbreak in fall or winter with high attack rate and high mortality rate (similar to 1918).

VI. Vaccine

The use of vaccine in an influenza epidemic poses many problems. At the present time no vaccine is available. There are six pharmaceutical companies engaged in the production of this vaccine. A significant titer of protective antibody responses appear 14 days after inoculation. Approximately one-third of the available vaccine is to be made available to the Armed Forces. Based on experience with other influenza vaccines, an effectiveness of 70% is the most that should be expected. There might be difficulty in administering the vaccine depending upon public and professional acceptance. Since there has been no true epidemic of Asiatic influenza in this country as yet, it seems especially advisable to emphasize vaccination of those most likely to develop complications,—namely the very young, the old and the debilitated especially those with chronic pulmonary disease.

Of greatest importance with respect to medical organization's historic socio-economic position, a meeting at Washington on July 22, 1957, which included AMA officers and Trustees, the Secretary of Health, Edu-

cation, and Welfare, and the Surgeon General, resulted in this government policy statement:

"The Public Health Service, in cooperation with the medical profession will stimulate and promote a nationwide voluntary program of vaccination against the prevalent strain of influenza. It will not, however, request federal funds for the purchase or administration of vaccine—except for its own legal beneficiaries. The State and Territorial health officers and the American Medical Association have jointly assured the Surgeon General that community resources, both public and private, will be mobilized to provide vaccinations for persons who are unable to pay for such protection."

The Tennessee State Medical Association sees no demonstrated need for federal participation in any future phase of influenza vaccine programs beyond the scope of activity visualized in the government policy statement.

VII. Management of the Patient

Reports indicate that the degree of prostration in patients with Asiatic influenza is extreme and they become bedridden within a short period of time. In the military, the majority of patients were hospitalized. Among civilian groups, greater reliance must, of necessity, be placed on home care as the current high occupancy rates in civilian hospitals do not permit large numbers of influenza patients gaining admissions to hospitals. Special situations would develop in civilian groups if the disease occurs in camps, large meetings, or assemblies as too frequently there are not adequate reserve facilities available for providing bed care for large numbers of patients who suddenly become ill. Each community should make a serious study and have suitable plans to cope with epidemics that might occur.

Antibiotics are generally agreed to be ineffective in virus infections. It is felt that there would be a certain amount of public demand for the use of antibiotics in influenza epidemics. Since it is well known that primary influenza infections often are followed by secondary bacterial infections,

a degree of justification in the use of antibiotics can be advanced. Several pharmaceutical houses have increased their output of antibiotics so that such drugs will be available if an increased demand occurs.

VIII. Epidemic Control Measures

Because of the rapidity of the development of an epidemic of influenza it is essential that individual physicians and medical societies have stand-by plans and procedures set up for immediate use should such an epidemic strike.

The Board of Trustees of the American Medical Association believes that the medical profession should assume leadership in formulating information on operational programs to meet the influenza situation. Toward these ends a series of articles will be published immediately in the JAMA to provide the latest scientific information in the nature and extent of epidemics everywhere in the world. The AMA Council on Drugs will investigate the use of antibiotics in treatment of this virus condition and will report to physicians. Lay information will remain available through mass circulation publications. Preparations are being made for release of emergency information through television, radio and press in the event of an epidemic in the United States. The AMA's operational program provides for alerting state medical associations for the need for fixed policy in a program of action. The need for personnel expansion, maximum utilization of existing personnel and facilities, postponement of certain elective surgery and diagnostic studies, cooperation with county and state public health agencies, and use of Federal Civil Defense Administration emergency hospital units were indicated or recommended.

The Tennessee State Medical Association recommends the following program to component societies, hospital staff organizations and local groups of physicians:

- (1) Formulate plans for the mobilization of all health resources: physicians, nurses, nurses' aids, pharmacists, medical technician, hospitals, clinics, etc., at a community level in the event of an influenza outbreak.

- (2) Immediate action should be initiated

to identify and report all suspected cases of Asiatic influenza to the County Health Department, who in turn will report to the State Health Department.

- (3) State and local programs must be coordinated with public health agencies and State and local health departments. There should be close cooperation concerning diagnosing and reporting influenza cases. Joint planning may be advisable in many areas.

- (4) Devise means locally for immediate dissemination of information among interested professional persons and agencies through meetings, conferences, etc. Make available to local news, radio and television agencies, competent professional personnel to help in interpreting scientific and medical information for these agencies. Special care must be exercised to avoid confusion, panic and "scare" approach.

- (5) While safeguarding the public health is primary, consideration must be given to various economic and sociologic factors when initiating stringent measures at the local level. The possible adverse effect upon business, industry and vital community activity must be considered in making all control decisions.

- (6) Although no official priority for vaccine has been assigned to various age groups it is hoped that physicians will concentrate on those individuals most likely to develop complications; the young, the old and the debilitated.

It is important that each of the component medical societies establish a committee immediately to put into effect such plans for epidemic control as may be necessary. Such plans must be governed by local conditions in the community and made in cooperation with various public health agencies at the local level.

IX. Conclusions

- (1) The Tennessee State Medical Association is alert to the possibility of an epidemic of Asiatic influenza. Plans are now being formulated so that maximum control can be exercised at the local level.

- (2) It is the intention of the Tennessee State Medical Association to keep its members and the people of this State accurately informed as to the progress of the disease.

- (3) Asiatic influenza is at this time a mild

disease and more important is not increasing in virulence with time. This disease is no different clinically than cases of influenza seen each winter in this section.

(4) Complications are occurring in the young, the old and debilitated. We would anticipate that those complications will respond to modern drug therapy.

(5) If this epidemic is compared with the Pandemic of 1918-19 the following differences are noted:

- (a) Asiatic influenza does not seem to concentrate on young adults as was true of Pandemic influenza.
- (b) Deaths attributed to complications should be lessened with the newer drugs.

(6) If a second wave of influenza should occur as did happen in 1918, we should remember that wholesale vaccinations can be started if circumstances permit. Patients who have had clinical or subclinical infection plus those vaccinated should such a move be necessary, will not leave many susceptible individuals to acquire the disease in a second or third wave.

(7) The Tennessee State Medical Association while fully cognizant of the possibility that Asiatic influenza may become epidemic, foresees no reason for alarm on the part of the public and no justification for publicity which would tend to cause public alarm where none should exist. At present there is no vaccine and it will be the first of the new year before we can expect sizeable supplies. In addition unless the disease becomes more severe than it is now, vaccination when possible should probably be restricted to those most likely to develop complications. Approved by the Board of Trustees, Tennessee State Medical Association.

DEATHS

Dr. George W. Leavell, 75, Bristol, died on August 12th at Bristol Memorial Hospital of arteriosclerotic heart disease.

Dr. C. R. Morrison, 83, Elbridge, died on August 15th at the Obion County General Hospital.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Chattanooga-Hamilton County Medical Society

The Society's regular monthly meeting was held on August 1st. The scientific program consisted of an interesting case report by Dr. Cecil E. Newell. Dr. M. F. Nelson, Dr. Wesley Stoneburner and Dr. David P. McCallie, acting as Moderator, discussed the topic "Cardiac Catheterization and Angiocardiography."

Knoxville Academy of Medicine

The Knoxville Academy of Medicine met in the Academy building on August 13. A very interesting program was presented. The first was a panel discussion entitled "Take a Letter Doctor" presented by the Knoxville Chapter of the National Registry of Medical Secretaries. The panel was organized by Mrs. Frances Crisp, R.M.S. Moderator was Dr. George A. Wagoner, Head, Business Education and Office Administration, University of Tennessee. Three physicians and three secretaries comprised the panel.

Robertson County Medical Society

The Robertson County Medical-Dental Society resumed its regular monthly meetings after the summer recess with its annual fish fry at the high school cafeteria in Springfield. General discussions were held on the Robertson County Blood Bank program and the Tennessee Indigent Hospital plan.

Northwest Tennessee Academy of Medicine

The newly organized Northwest Tennessee Academy of Medicine met in June to elect officers for the new society. Dr. Malcolm Tipton, Union City, was named President, and Dr. J. T. Fuller of Newbern was elected Secretary. A committee was appointed to study adoption of a Constitution and By-Laws. A program committee consisting of Dr. David Taylor, Dyersburg; Dr. D. C. Gary, Union City; and Dr. W. T. Rainey, Tiptonville, was appointed.

NATIONAL NEWS

The Month in Washington

If dangerous epidemics of "Asian flu" break out in the country this fall and winter, the medical profession will have its hands full.* But the doctors won't be taken by surprise, nor will they lack specific information on proper treatment.

While the attacks in the U. S. were still sporadic and the death rate low—three fatalities in the first 11,000 reported cases—a number of major, nationwide efforts were under way to combat the disease in the months when influenza rates generally are the highest.

1. Acting in coordination with U. S. Public Health Service, the American Medical Association was pressing forward with its campaign to insure that all physicians are informed of how to deal with the disease.

2. In line with recommendations of the AMA committee, a number of state medical societies by mid-August had laid out complete emergency plans, ready to be put in operation if needed.

3. U. S. Public Health Service epidemic intelligence experts were scanning the country for outbreaks that might be Asian influenza, and other PHS officers were investigating acute respiratory diseases. PHS also set up machinery to keep the medical and health professions informed on nationwide developments in the influenza picture.

4. Advising Surgeon General Burney was a special committee, which included representatives from AMA, American Academy of Pediatrics, American Academy of General Practitioners and the Association of State and Territorial Health Officers.

5. Manufacturers of the vaccine, by running their plants on two or three shifts and seven days a week, were hoping to have produced 60,000,000 cc. by February 1.

There was, of course, the possibility that with Congress in session through most of the summer a vast federal program would be set up, with the U. S. purchasing and allocating the vaccine. It was heartening to the medical profession that this possibility was pretty well eliminated in the early stages when the Department of Health, Education, and Welfare announced the following as official policy: "The Public Health Service, in cooperation with the medical profession, will stimulate and promote a nationwide voluntary program of vaccination against the prevalent strain of influenza. It will not, however, request federal funds for the purchase or administration of vaccine—except for its own legal beneficiaries. The State and Territorial health officers and the American Medical Association have jointly assured the Surgeon General that community resources, both public and private, will be mobilized to provide vaccinations for persons who are unable to pay for such protection."

This policy was reaffirmed later by the White House, when the President asked for half a million dollars to finance the additional work for Public Health Service. The White House statement said flatly that it did not plan to have the federal government buy vaccine.

The AMA's Board of Trustees selected as members of the special committee the same physicians who make up the Civil Defense Committee, with Dr. Harold C. Lueth as Chairman. In addition to the work of this committee, special articles are being published in the AMA Journal, mass circulation media are being used to bring information on Asian influenza to the lay public and the AMA Council on Drugs is investigating and reporting to physicians on the use of antibiotics in treatment of the disease.

AMEF Makes Progress

Whether doctors are attaining the necessary goal in order to prevent the encroachment of the federal government on medical schools was discussed at the annual meeting of the American Medical Education Foundation in Chicago in January, Dr. A. L. Delaney, Liberty, State Chairman for the AMEF, reports. He pointed out that costs of medical schools increased by approximately \$13,000,000 in 1956 and that doctors during that time raised \$1,000,000 for AMEF. Most of the physicians at the meeting thought that efforts of doctors to finance the costs of medical education should be in the nature of a catalyst rather than an attempt to pay the entire bill. It was emphasized that professors in medical schools do not contribute to AMEF in the same proportion as do practicing physicians.

Dr. Delaney, representing the Texas Medical Association at the meeting, was selected to act in an advisory capacity on the national committee.

Almost simultaneously with the Chicago meeting, AMEF released figures on its distribution of grants for the year to the country's 83 medical schools. Total funds available were \$1,072,727. Each four year school received \$6,850 from the foundation; each two year school, half that sum. In addition, each school received all funds especially earmarked for that school. Baylor University College of Medicine received a total of \$11,023.33; Southwestern Medical School of the University of Texas, \$9,011.18; and University of Texas Medical Branch, \$10,239.33.

10 Million Now Receive Social Security Checks

Social Security benefits are now being paid to 10 million persons at the rate of more than half a billion dollars a month, the Social Security Administration announced recently.

The Government has paid 28 billion dollars in old age and survivors' benefits in the 20 years since the program became operative Jan. 1, 1937. The 10 million current beneficiaries include 7,420,000 retired workers and dependents and

2,580,000 survivors of insured workers.

Payments to the 10 million beneficiaries, are now being made at rate of 540 million dollars a month. Of this total, 425 million dollars goes to the 7,420,000 retired workers and 115 million to the 2,580,000 survivors of insured and disability benefits—the latter to start in August under a 1956 amendment—will amount to an estimated 7 billion dollars or 580 million a month.

MEDICAL NEWS IN TENNESSEE

Plateau Medical Assembly

The Plateau Medical Assembly conducted an interesting scientific meeting on August 21st at Scott County Hospital in Oneida. The program was as follows: B. M. Overholt, M.D., Cardiologist, Scott County Hospital, presiding; General Pediatric Problems, Oliver Hill, M.D., Knoxville; Pediatric Urology, Avery King, M.D., Oak Ridge; and Plastic and Reconstructive Surgery in Infants and Children, James Cox, M.D., Knoxville, followed by a social hour and picnic at Lay's Lake. Evening Session.—R. B. Wood, M.D., Presiding; Recent Developments in Anesthesia, James Downs, M.D., Knoxville; Round Table Discussion, Doctors Hill, King, Cox and Downs.

Vanderbilt Receives Health Research Grant

Vanderbilt University School of Medicine has received a \$100,091 Federal grant for an expanded research program. The grant will be applied to a \$216,332 program for installation of new laboratory and research facilities.

University of Tennessee College of Medicine

Dr. Frank E. Lundin, Jr., Dr. Gerald I. Plitman and Dr. Clifford I. Argall, of Memphis, have been named assistant professors of medicine in the Department of Medical Laboratories. Dr. Sidney D. Jones, Jr., Memphis, was named an assistant in the division of Obstetrics and Gynecology. Appointed assistants in the Division of Preventive Medicine were: Dr. James Knox Tate of Bolivar, Dr. Claude McKnight Williams of Ripley, Dr. John Dorian of Memphis, and Dr. R. F. Kelsey, of Collierville.

TSMA Policy Concerning Asiatic Influenza

Through the Executive Committee of the Board of Trustees, TSMA has adopted a policy on Asiatic Influenza. This statement has been sent to all secretaries of county medical societies and has been released to the press, radio and television throughout the state. It is published as a Special Item in this issue.

State of Tennessee Department of Public Health

Laboratory Studies of Rickettsial and Virus Diseases. In recent years there has been an increase in viral infections in Tennessee. Although poliomyelitis has been present for many years, it has only been recently that such diseases as psittacosis, Eastern equine encephalitis, Western equine encephalitis, St. Louis encephalitis, aseptic meningitis due to coxsackie and ECHO virus have come into prominence. The latest disease which is attracting attention is the Oriental (Jap) strain of Influenza A virus.

The reason these diseases are being brought into prominence is due to the development of new laboratory procedures in their diagnosis. These procedures are now relatively simple in character although special laboratory facilities are required for performing them.

When the Tennessee Department of Public Health moved into new quarters in the Cordell Hull Building in Nashville it was possible to provide suitable quarters for a virus and rickettsial laboratory and to obtain trained personnel to work in it.

At present, tests are run for the following types of infection:

Poliomyelitis virus	Influenza
Coxsackie virus	Mumps
ECHO virus	Infectious mononucleosis
Encephalitis	Lymphocytic chorio-
Eastern equine	meningitis
Western equine	Rocky Mountain spotted
St. Louis	fever
Psittacosis	Typhus fever

The following tests are performed in the laboratory:

Complement fixation	Hela cell cultures
Neutralization	Egg inoculation
Hemo-agglutination	Mouse inoculation

The following specimens may be submitted for study:

Blood: Collect 8 to 10 cc. in serologic test container. Blood specimens are used to perform complement fixation tests, neutralization tests, and hemo-agglutination tests.

A single blood specimen is of no value in arriving at a diagnosis. Two specimens should be submitted, the first should be obtained as early as possible after onset of the disease and a second during convalescence. Because broad spectrum antibiotics delay the appearance of antibodies for psittacosis, Rocky Mountain spotted fever and typhus fever, a third blood should be obtained 6 to 8 weeks after onset when one of these infections is suspected.

A four-fold increase in titer between the first and second tests is considered significant in complement fixation and neutralization tests.

Nasopharyngeal specimens: In an attempt to isolate the virus in suspected cases of coxsackie, ECHO and influenza infections, nasopharyngeal washings should be obtained. Containers are supplied with a nutrient broth. The nasopharyngeal washings may be obtained by swabbing the nose and having the patient gargle with some of the broth or a sterile ear syringe may be used to squirt broth through the nose and into the pharynx collecting the specimen in a sterile emesis basin. After replacing the broth in the container, it should be quick frozen and sent to the laboratory in a frozen state.

Feces: For the isolation of poliomyelitis, coxsackie and ECHO viruses, a specimen of feces about the size of a nickel should be obtained from the patient, placed in a sterile container, quick frozen and transmitted to the laboratory in a frozen state. (From the State Department of Public Health.)

PERSONAL NEWS

Dr. W. T. Anderson, Gainesboro, has been elected Mayor of that City.

Dr. J. F. Barker has been honored for 62 years in the practice of medicine in Sequatchie County.

Dr. Sidney S. Whitaker has returned to Bristol and opened his office for the practice of medicine in the Doctors Building.

Dr. Charles R. Thomas, Chattanooga, Tennessee, Councilor to the Southern Medical Association, participated in the recent ground-breaking ceremonies for the Association's headquarters building.

Dr. Jones F. Rutledge, Jr., has moved to Lewisburg where he will be associated in the practice of medicine with his brother, **Dr. Warren Rutledge**.

Dr. Samuel Lambeth and **Dr. Norman McKinnon, Jr.**, have moved to the new medical building near Blount Memorial Hospital at Maryville.

Dr. Harwell Wilson, Memphis, recently addressed the Sertoma Club.

Dr. Arthur C. Dunlap, Paris, has been named Chief of Staff at Henry County General Hospital.

Dr. J. Ray Smith was named Vice-Chairman and **Dr. E. P. Mobley** was elected Secretary of the hospital's medical staff.

Dr. Greer Ricketson, Nashville, recently addressed the Middle Tennessee Dental Hygienists Association.

Dr. John A. Marsee, Liberty Hill, has opened his office for the practice of medicine at Maynardville.

Dr. Earl Williamson, Jr., Jackson, has announced the opening of his office for the practice of medicine and surgery.

Dr. Gray E. B. Stahlman, has opened his office in the Medical Arts Building, Nashville, for the practice of neurological surgery.

Dr. Virgil M. Howie announced the opening of his office in Nashville, for the practice of pediatrics.

Dr. Donald L. Carlon has become associated with Doctors McClure, Ivie, Beveridge and Greer in the practice of radiology in Nashville.

Dr. Tom E. Nesbitt has become associated with Doctors Carter, Tudor and McClellan in the practice of urology in Nashville.

Dr. C. S. Young, Manchester, was a recent guest speaker before the Area Six Licensed Practical Nurses Association.

Dr. J. Hicks Corey, Jr., Chattanooga, announces his association with **Dr. William E. Van Order** and **Dr. Joseph V. Lavecchia** in the practice of pediatrics.

Dr. Ira M. Long, Chattanooga, recently discussed "Eye Problems Confronting Your Eye Specialist" on the "Your Doctor Speaking" television program.

Dr. Robert L. Sanders, Memphis, recently received the Baptist Hospital's coveted "Award of Merit" plaque.

Dr. J. H. (Jack) Brock, Memphis, is now associated with Dr. Ernest G. Kelly in the practice of surgery at 899 Madison Avenue, Memphis.

Dr. J. T. Elmore has opened his office for the practice of medicine at Halls.

Dr. Orren W. Hyman, Jr., has been added to the staff at Oak Ridge Hospital as the post-resident assistant in radiology.

ANNOUNCEMENTS

Tennessee Valley Medical Assembly

The Tennessee Valley Medical Assembly will open at the Read House in Chattanooga on September 30 and run through October 1. Speakers include the following: Dr. Paul Dudley White, Boston; Dr. Edith M. Loncoln, New York City; Dr. J. Arnold Barger, Rochester, Minn.; Dr. Philip J. Hodes, Philadelphia; Dr. Ernest B. Howard, Chicago; Dr. Harold A. Schofield, Oak Park, Ill.; Dr. I. S. Ravdin, Philadelphia; Dr. Joseph W. Kelso, Oklahoma City; Dr. Charles F. Geschickter, Washington; Dr. Irving S. Cooper, New York City; Dr. Meredith F. Campbell, Miami; Dr. Alexander Marble, Boston; and others. Banquet speaker will

be Frank B. Berry, Washington. For reservations write to: Chattanooga Convention and Visitors Bureau, 819 Broad Street, Chattanooga, Tennessee. Registration fee is \$15.00, and should be enclosed with reservation requests, payable to Tennessee Valley Medical Assembly. AAGP approved, Category I.

New Physicians Licensed in the State

The following M.D.'s have been licensed to practice in the State of Tennessee by the Licensing Board for the Healing Arts.

Robert B. Couch, Nashville	Oliver A. Duff, Memphis
Frank S. Farris, Rogersville	Dexter L. Woods, Jr., Nashville
William O. Bryant, Roanoke, Virginia	Bruce A. Elrod, Chattanooga
Aubra D. Branson, Knoxville	Virgil M. Howie, Nashville
Alexander M. Burford, Jr., Knoxville	James N. Johnson, Jr., Greenville, S. C.
Orville A. Zeller, Jr., Union City	John W. Reece, Chattanooga
James O. Pierce, Tuscaloosa, Alabama	Willis H. Ploof, Kingsport
Walter Huling, Roanoke, Virginia	Charles H. Day, Lake Charles, La.
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AMA Announces Administrative Changes

The American Medical Association's Board of Trustees has announced two important changes in the administrative setup. Dr. George F. Lull, who has been secretary-general manager of the Association for 11 years, has been appointed to the newly-created position of Assistant to the President of AMA. He will continue serving as secretary, which is an elective office.

The Board announced the appointment of Dr. F. J. L. Blasingame of Wharton, Texas, to the position of General Manager of AMA. He will take over his new duties on January 1, 1958. Dr. Blasingame was elected a member of the Board of Trustees in 1949 and served as President of the Texas Medical Association in 1955.

Postgraduate Courses on Diseases of the Chest

The Council on Postgraduate Education of the American College of Chest Physicians will present the first of its 1958 series of postgraduate courses in Chicago, October 21-25, at the Hotel Knickerbocker. Tuition is \$75. The most recent advances in the diagnosis and treatment of chest diseases—medical and surgical—will be presented. Further

information may be obtained from the Executive Director of the College, 120 East Chestnut Street, Chicago 11, Illinois.

Gastroenterological Convention

The 22nd Annual Convention of the American College of Gastroenterology will be held at The Somerset in Boston, Mass., on October 21-23.

On October 24, 25 and 26, Dr. Owen H. Wangenstein of Minneapolis, and Dr. I. Snapper of Brooklyn, will again be the moderators of the Annual Course in Postgraduate Gastroenterology. Attendance at the Course will be limited to those who have registered in advance.

Copies of the program and further information concerning the Postgraduate Course may be obtained by writing to: American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

AMA Plans 11th Clinical Meeting

The birthplace of American independence—Philadelphia—will be the scene of the American Medical Association's 11th Clinical Meeting December 3-6. Center of activities will be Convention Hall where scientific exhibits, color television, motion pictures, technical exhibits and scientific lectures will be presented "under one roof." Headquarters for the House of Delegates will be the Bellevue-Stratford Hotel.

Highlights of the three-and-a-half day convention geared especially for the nation's family doctors include: (1) Special transatlantic conference between distinguished physicians in London and Philadelphia on "Advances in Chemotherapy of Cancer" via two-way telephone at 3 p.m. EST Wednesday; (2) Complete color television schedule of surgical demonstrations emanating from Lankenau Hospital; (3) Motion picture program daily plus a special session Tuesday evening; (4) Exhibits featuring a well-rounded program and special displays on the history of medicine in the Philadelphia area, fractures and manikin demonstrations on problems of delivery; (5) Panel discussions on cardiovascular disease, cancer, emotional problems of menopause, hypertension, diabetes, arthritis, traumatic injuries; (6) The General Practitioner of the Year Award to be presented by AMA to an outstanding family doctor.

ABSTRACTS OF CURRENT LITERATURE

Recurrent Mitral Stenosis. Charles P. Bailey, Harry Goldberg, and Dryden P. Morse. *J.A.M.A.* 163:1576, 1957.

These investigators point out that the surgical correction of mitral stenosis by mitral commissurotomy is now becoming a widely accepted surgical procedure and is being done in many

medical centers throughout the country. They were impressed with a significant number of patients who, after mitral commissurotomy by the left-sided approach, developed recurrent mitral stenosis with symptoms referable to the recurrent stenosis after an initial period of improvement. Their report is based on a thousand patients operated on for mitral stenosis. The cases included the period from 1948 thru 1956. Among their thousand cases 135 deaths were recorded during the period of observation. Seventy-seven of these were classified as operative deaths, 2 were attributed to suicide, 50 were classified as late deaths, and in 6 cases death was ascribed to recurrent stenosis of the mitral valve. There were 792 patients who survived; 73 cases were not followed up. Of the 792 survivors, 711 or 90% were improved, 16 were operated upon again for recurrent stenosis of the mitral valve; 49 of the survivors were classified as unchanged following operation, and 32 were considered to be worse.

These workers feel that in as much as full anatomic mobilization of both valve commissures had not always been possible with the standard left-sided operative approach, it may be expected that perhaps as many as 20% of their patients who have been operated upon and had clinically satisfactory results may ultimately develop restenosis of the mitral valve.

The analysis of the thousand cases also reveals that 6 patients who died and came to autopsy were found to have restenosis of the mitral valve. Also 16 patients who clinically had evidence of restenosis and were operated upon again were found to have recurrent stenosis.

They point out that the early diagnosis of recurrent mitral stenosis is now possible by catheterization of the left heart, by the technic of Björk and Fisher and his co-workers.

Of the 6 patients who presented evidence of clinical improvement following the initial commissurotomy for periods of 1 to 3 years, and then deteriorated and at autopsy were shown to have restenosis of the mitral valve, Aschoff bodies were found in the left auricular appendages in 3 and Aschoff nodules were found in the left ventricular myocardium in a fourth.

The authors felt that the probable etiology of the recurrent mitral stenosis was: (1) smoldering latent recurrent rheumatic activity; (2) incomplete surgical mobilization of the fused valve structures; and (3) an extreme state of valvular pathology by which the valve had been converted essentially into a fibrous (or fibrocalcific) structure. The workers pointed out that in the first 1,200 patients operated upon in their center, when the left-sided approach was used in only 33.1% of the cases was it possible to open both commissures. They, however, point out that of the last 200 consecutive mitral commissurotomies carried out by the right-sided thoracic approach it was possible to achieve some separation of both commissures in 97.5% of the cases. They emphasized that the advantage of the right thoracic

approach is that technically the valve can be approached without using a markedly curved finger or angulated valvulotome.

In light of these findings these workers feel that one should be on the lookout for recurrent mitral stenosis following mitral commissurotomy and that if evidence of this exists, consideration for a second operation should be entertained using the right-sided approach. They also feel that the number of recurrent stenoses would probably be reduced by using the right thoracic approach and as the skill of operators improved. (Abstracted for Middle Tennessee Heart Association by H. R. Anderson, M.D., Nashville.)

"Survival After Coronary Endarterectomy In Man." Bailey, Charles P.; May, Angelo; Lemmon, William M. JAMA, 164: 641, 1957.

Dr. Bailey et al. have recently performed a coronary endarterectomy successfully on two patients who had evidence of coronary insufficiency. One of the two patients was completely relieved of his anginal pain and has returned to part time employment; the other patient has made a "satisfactory recovery" but it was not stated whether he had absence of anginal pain, or had returned to work.

The overall problem of coronary arteriosclerosis in the United States has been very difficult to deal with and apparently is increasing. There were 299,109 deaths attributed to arteriosclerotic heart disease in 1951; in 1954, 379,788 deaths were reported. It has been estimated that 800,000 attacks of acute myocardial infarction occur annually in the United States.

Clinical coronary arterial disease, in the vast majority of cases, is caused by atherosclerosis involving the main coronary arteries or their larger branches. The intramural portions of the coronary arterial tree characteristically remain free of disease. Frequently, the disease is segmental in localization affecting only one or more narrow zones usually in the first four centimeters of the coronary ostium.

In recent years, arterial occlusive disease in the peripheral and larger blood vessels has been attacked by vascular surgeons, with ever increasing improvement to both surgical mortality and clinical results. Although the problem of coronary disease is similar to peripheral occlusive arterial disease, the conditions are not identical, the anatomical location of the former increasing the operative risk and technical difficulties. Angelo May, one of the co-authors of this paper, has demonstrated the feasibility of coronary endarterectomy during his rather extensive investigations in this field in laboratory animals. He has also developed a hollow metal instrument which makes the "reaming out" of occluded vessels possible.

Both of the cases that had the coronary endarterectomy, in which the May instrument was used, withstood the surgery well, and there were no serious post-operative complications.

A new technique and instrument for the performance of coronary endarterectomy has been developed, and the first two cases of survival after this operation have been reported. It is the authors' belief that the chief objection in acceptance of the revascularization procedure for coronary insufficiency by the general medical profession is the realization of its inherent limitations. No definite conclusions have been drawn from these two cases; they have been presented with the hopes of stimulating further research and work, and arriving at an acceptable procedure for this most important problem. (Abstracted for the Middle Tennessee Heart Association by Robert N. Sadler, M.D., Nashville.)

The Normal Vascular Anatomy of the Human Femoral Head During Growth: Joseph Trueta, Oxford, England. The Journal of Bone and Joint Surgery, 39-B, No. 2, May, 1957.

The origin of the blood supply to the human femoral head changes from the time of birth to adulthood and may be conveniently divided into five phases.

Phase I—At birth. Vessels may come from the ligamentum teres but are not constant. Other vessels come from the lateral side of the head, while other vessels emerge vertically from the top of the ossified shaft.

Phase II—Infantile. From four months to four years. The predominant blood supply arises from the metaphyseal vessels crossing the area later to be occupied by the epiphyseal plate. There are no penetrating vessels from the ligamentum teres.

Phase III—Intermediate. From about four to seven years. The epiphyseal plate has established a firm barrier between the epiphysis and metaphysis and metaphyseal blood flow becomes almost negligible while the ligamentum teres has not yet provided vessels to the epiphysis. During this time, the only source of blood to the epiphysis comes from the lateral epiphyseal vessels entering on the lateral aspects of the head.

Phase IV.—Pre-adolescence. Nine to ten years during this time, the arteries from the ligamentum teres reach the depths of the epiphysis and anastomose with branches of the lateral epiphyseal arteries. Thus the epiphysis receive blood from two sources.

Phase V—Adolescence. The barrier of the epiphyseal plate begins to disappear and vascular anastomoses develop, bringing into being the adult stage of circulation, when the epiphyseal and ligamentum teres vessels are found to be anastomosing at the metaphysis. (Abstracted by Thomas F. Parrish, M.D.)

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This review classifies these tumors and discusses prognosis and treatment. Early diagnosis is mainly in the hands of the family physician or pediatrician.

RETROPERITONEAL TUMORS IN CHILDHOOD*

GEORGE W. HOLCOMB, JR., M.D.,* and WILLIAM EDWARDS, M.D.,† Nashville, Tenn.

Retroperitoneal tumors constitute the largest group of abdominal neoplasms in children. From 1933 through 1954, 32 patients were treated at Vanderbilt University Hospital for some type of retroperitoneal tumor. (Table 1.) The majority of these

9 weeks to 5 years. A mass was palpated by an alert physician during a routine physical examination on 3 occasions and was noted first by the family in 6 instances. The complaints of 7 patients were the late symptoms of malaise, weight loss and anorexia. This is such a highly malignant tumor that considerable pessimism has arisen concerning its management. It should be emphasized that complete pessimism and a defeatist attitude should be avoided when an embryoma is discovered.

Pathology. An embryoma arises within the kidney substance, and as it enlarges the capsule becomes greatly distended. (Fig. 1.)

Table 1.
RETROPERITONEAL TUMORS IN CHILDHOOD
VANDERBILT UNIVERSITY HOSPITAL
1933-1954

Type Tumor	Number of Patients	Number Resectable	Number of Survivors for 3 or More Years	Percentage Survivors
Wilm's embryoma	18	10	6	33%
Neuroblastoma	7	0	0	0
Lymphosarcoma	4	0	0	0
Adrenal adenoma	1	1	1	100%
Adrenal carcinoma	1	1	1	100%
Teratoma	1	1	1	100%
Total	32	13	9	28%

patients had a Wilm's embryoma or a neuroblastoma. Other tumors observed were a teratoma, an adrenal adenoma, an adrenal carcinoma and four lymphosarcomas of the retroperitoneal lymph nodes. Except for the patient with the adrenal adenoma most of the neoplasms were discovered because of a mass noted by the mother while dressing or bathing the child.

Wilm's Embryoma

Eighteen patients were treated for a Wilm's embryoma. Their ages ranged from

*Read before the meeting of the Tennessee State Medical Association, April 10, 1957, Nashville, Tenn.

†From the Department of Surgery, Vanderbilt University School of Medicine, and the Pediatric Surgical Service, Vanderbilt University Hospital, Nashville, Tenn.



FIG. 1. Cut surfaces of a Wilm's embryoma. Only a small portion of normal renal tissue remains at the top. The tumor arose within the renal substance and expanded the capsule rather than invading the renal pelvis.

The capsule may be so thin that it will rupture with the slightest manipulation. For the most part the tumors are solid but some have cystic areas. This type of neoplasm seldom infiltrates the renal pelvis though it frequently invades the veins or lymphatics. Many different cell types are seen although epithelial elements predominate, forming sheaths of cells or fairly well differentiated tubules. Striated muscle

is observed in some instances. Occasionally small pieces of bone or cartilage are noted. The finding of invasion of blood vessel, as well as rupture of the capsule during the operation usually indicate a fatal outcome. Conversely, failure to observe these features in no way assures one of a good prognosis.

Diagnostic Studies. A mass palpated in the region of the renal fossa of a child suggests the presence of a Wilm's tumor. It has been suggested that a neuroblastoma may be differentiated from a Wilm's tumor by the fact that it may extend to the opposite side of the abdomen. Although a Wilm's tumor usually does not do this, an embryoma was noted to extend past the midline in 4 patients of this series.

An intravenous pyelogram is diagnostic and only rarely is it necessary to resort to retrograde pyelography. Distortion of the calyceal pattern by pressure with medial or anterior displacement is often found. Upward or lateral displacement is rare but does occur (Fig. 2); downward displace-

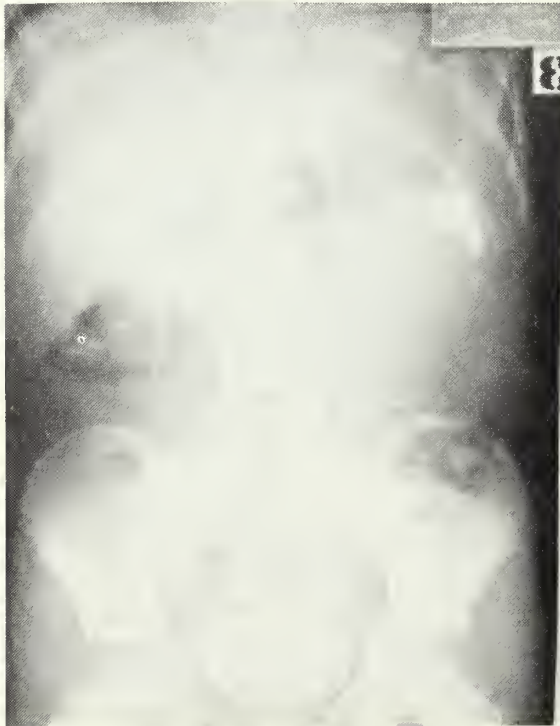


FIG. 2 Intravenous pyelogram shows a large mass widely separating the left upper and lower calices, a characteristic of Wilm's tumor which arises within the renal substance and distorts the calyces as it enlarges.

ment suggests the presence of an adrenal tumor or a teratoma. Hydronephrosis is

easily differentiated by pyelography. A neuroblastoma or a teratoma may show calcifications scattered throughout; occasionally a neuroblastoma may invade the kidney and produce distortion of the calices similar to a Wilm's tumor.

Urinalysis is usually of no assistance in arriving at the diagnosis for only rarely is hematuria found. We have not observed a Grawitz tumor in children at Vanderbilt University Hospital.

Treatment. Although some cures have been reported with radiation therapy alone, most observers agree that nephrectomy will produce a larger number of survivors. Priestly and Broders,¹ as well as others, advocate preoperative irradiation. In opposition to this view Gross² states that the preoperative irradiation delays the removal of the tumor for one to several weeks. He believes the irradiation can soften or liquefy the tumor and thereby increase the chances of neoplastic cells breaking into the bloodstream. Also, if X-ray or cobalt therapy is given before the diagnosis is evident, patients with some benign tumor will receive irradiation unnecessarily. For these reasons we believe that a nephrectomy should be done as soon as the patient can be prepared for operation. While it is not necessary to consider these patients as extreme emergencies, they should not lie around the hospital for several days while all interested persons palpate the mass. There is a real danger of breaking off a tumor embolus during manipulation. This is well illustrated by one patient who died suddenly during the operation from a pulmonary tumor embolus.

A routine flank incision for nephrectomy was used on 2 occasions and a transperitoneal approach in 16 cases. We prefer the latter exposure in all instances. A transverse incision just above the umbilicus extending to the posterior axillary line gives better access to the operative field than the conventional kidney incision. This can be extended upward in the midline to the xiphoid if more exposure is needed. Every effort is made to ligate the renal vein first and thereby prevent tumor embolism. Excessive traction or compression of the tumor should be avoided as this may lead to rup-

ture of the capsule and contamination of the operative field with neoplastic cells. Care should be used not to compress the inferior vena cava and produce an acute shortage of blood returning to the right auricle; sometimes the vena cava will be occluded due to a faulty position of the deep retractors. Under such circumstances the blood pressure falls precipitously to shock levels and the pulse rises to an alarming rate. Should this occur the operator must release the traction on the kidney immediately and remove the retractors to avoid a fatality.

Postoperative irradiation is started immediately following operation, continuing until 4000 to 5000 R (measured in air) have been given through three ports of the renal fossa in daily doses of 200 R. It is doubtful if spray irradiation to the lungs or abdomen will be effective.

Of 18 patients with a Wilm's embryoma, 10 were resectable and 6 of these have survived. Three children have survived for 8 years and one each for 3, 11 and 14 years. Neither the size of the tumor nor the microscopic appearance seems to have any effect on the prognosis. Three of the 6 who survived were found to have a large mass extending across the midline. Microscopically there was evidence of invasion of the capsule in the specimen from a 19 month old boy who has survived for 11 years. Among the factors which suggest a good outlook, age is consistently the only reliable one. All 6 survivors were under 2 years of age when operated upon, and 3 were under one year of age. This also has been emphasized by Gross² who reported that an 80 per cent 5 year survival rate was obtained in patients under one year of age following extirpation of the tumor and immediate postoperative irradiation. His survival rate for all ages was 47 per cent. The survival rate at Vanderbilt University Hospital is 33 per cent. When including only those patients who were resectable at the time of operation the figure rises to 60 per cent, and to 75 per cent for those under 24 months of age.

The improved prognosis associated with younger patients may be due to the fact that the tumor is present at birth and the sooner it is discovered and removed, the greater the chance of preventing metastasis.

This presents a challenge to all physicians who perform routine well-baby examinations. The opportunity to improve the long-term survival rate therefore lies in the direction of earlier diagnosis rather than that of more extensive surgical procedures. It is absolutely impossible to palpate the abdomen of a crying infant with any degree of accuracy. By routinely allowing a baby to nurse a bottle or a pacifier while the examiner palpates his well relaxed abdomen, early detection of even the smallest tumor is possible long before symptoms arise.

Neuroblastoma

Neuroblastomas are malignant tumors which arise from sympathetic formative cells, the primitive neuroblasts that failed to mature. They may be discovered anywhere sympathetic nerve tissue is found, but there is a predilection for the suprarenal area. The tumor is highly malignant and metastasizes early to the skull, long bones, liver and retro-orbital region via the lymphatics and bloodstream. It also may invade the kidney and other adjacent structures.

Examination showed the mass to extend beyond the midline in 5 instances but nodules were noted in only 2 cases. Nodularity as well as extension beyond the midline has been suggested as a means of differentiating this type of neoplasm from the usually smaller and smoother Wilm's embryoma. These features did not prove to be of diagnostic significance in the cases reported herein.

Intravenous pyelography revealed downward and medial displacement of the kidney in most instances. This is a most valuable diagnostic finding. Often one can see calcifications scattered throughout the tumor. However, it should be remembered that calcifications also are found in teratomas.

Initially there are no symptoms. Only a palpable mass is noted. Again the medical profession is presented with the challenge to discover these masses before advanced symptoms of malaise, weight loss, black eyes, anorexia, fever and anemia occur.

Although we have not had a survivor in our 7 cases, it is significant that none were resectable when they reached the hospital.

Whittenborg³ reported 73 cases in 1950 and only 40 per cent were localized. In spite of this, resections were done whether the entire tumor could be removed or not and irradiation was begun immediately. This aggressive program resulted in a survival rate of 29 per cent. Again a higher survival rate of 45 per cent was found in patients under two years of age. The discovery of neuroblastoma in the bone marrow is a contraindication to abdominal exploration. Study of the bone marrow should be done prior to operation when a neuroblastoma is suspected.

Two such tumors were observed in this hospital.

One patient was a 9 month old girl showing Cushing's syndrome due to a benign adrenocortical adenoma. (Fig. 3.) This has been reported in detail by Weidner and Towery.⁴ The occurrence of this syndrome in children is rare, but when associated with a tumor carcinoma is more common than adenoma. Under ten years of age adrenocortical hyperplasia is not often found to be the cause of Cushing's syndrome. The second case was that of an adenocarcinoma.

Case 1. The 9 month old baby presented the



FIG. 3. A 9 month old female with Cushing's syndrome due to an adrenal adenoma. The same patient 3 years after operation, asymptomatic and developing normally. (Courtesy and permission of the authors and C. V. Mosby Co.)

Adrenocortical Tumors

Tumors arising from the adrenal cortex may be benign or malignant. They usually manifest themselves either by an over production of steroids closely related to compound F, or an excess of virilizing hormones.



usual obesity with a moon-shaped face, plethora, purplish striae, and hypertension of 270/170 of Cushing's syndrome. A firm, smooth mass was palpated in the left upper quadrant. The genitalia were normal with no evidence of an excessive production of virilizing hormones. Urinary 17-ketosteroids were within normal range, but the 17-ketogenic corticoid excretion was 6.15 mg. for 24 hours or over twice the normal value. Intravenous pyelograms revealed downward displacement of the left kidney suggesting an adrenal tumor.

ACTH therapy (25 mg. intramuscularly per 24 hours) was begun prior to operation. Through a left thoracoabdominal incision a well encapsulated 8 cm. sized tumor was excised. Postoperatively she was continued on ACTH, 25 mg. every 6 hours and hydrocortone acetate, 100 mg. every 8 hours. The latter was reduced slowly over the next 9 days. Her convalescence continues to be uneventful 3 years later.

Case 2. This 2 year old girl developed pubic hair with hypertrophy of the clitoris and labia at 7 months of age. There was no evidence of an electrolyte or water imbalance.

Because of bowed legs she had been treated for rickets. The bowing resulted from fusion of the epiphyseal plates due to androgen stimulation rather than vitamin D deficiency. A 4 cm. mass was palpated in the left upper quadrant. Intravenous pyelograms revealed downward displacement of the left kidney and medial displacement of the stomach. The 24 hour ketosteroid determinations revealed 271 and 194 mg. per day; this dropped to 0.9 mg. per day postoperatively, suggesting the absence of functioning metastatic tumor remaining within the patient.

The left adrenal gland and kidney were removed through a thoracoabdominal incision as one specimen because the operator noted extension of the tumor into a large adrenal vein which also extended into the renal vein. The wide exposure allowed by a thoracoabdominal incision permitted successful removal of this mass without breaking off a tumor embolus. This girl is alive and well three and a half years later.

Teratoma

Retroperitoneal teratomas constitute a small but interesting group of neoplasms in infants. They are likely to be detected within the first few months of life because of a silent, progressive enlargement of an abdominal mass. About two-thirds of those reported in the literature were discovered in patients under two years of age.

These tumors may be benign or malignant. Some may be entirely cystic, others predominantly solid but usually there is a mixture. They frequently contain skin, nerve tissue or teeth (ectoderm), respira-

tory, bladder or intestinal epithelium (entoderm), and connective and vascular tissue (mesoderm). These tumors usually arise in the paravertebral gutter near the kidneys and pancreas but often are not attached to any structure. This feature prompted Hansmann and Budd⁵ to call them "unattached retroperitoneal tumors." Most often there is a well defined capsule around the teratoma.

Plain X-ray films of the abdomen will show displacement of the intestines by a mass which frequently contains teeth or other calcifications. Occasionally an ill-defined portion of a skeleton may be visible. Intravenous pyelograms may show displacement of a kidney without distortion of its pelvis. The ureter may be partially blocked, resulting in hydronephrosis or completely blocked without any visible concentration of dye on the X-ray films.

We have encountered one patient exhibiting a retroperitoneal teratoma at Vanderbilt University Hospital.

The mother noted an abdominal mass in this female infant at 3 weeks of age while bathing her. The mass occupied most of the right upper abdomen and extended beyond the midline. Intravenous pyelograms revealed no concentration of dye on the right side, and an irregular area of calcification was noted within the mass.

At operation, a large tumor and the right kidney were removed because the latter was adherent to the capsule which surrounded the teratoma. Upon opening the capsule and cutting the tumor a nodular cystic and solid benign neoplasm containing hair was found. (Fig. 4.) She is living and well three and one half years later.

Lymphosarcoma

Four patients with extensive retroperitoneal lymphosarcoma are included in this series. Two of them were *in extremis* and were not operated upon. The other 2 were explored but due to widespread involvement only biopsies were taken. All 4 died within a few months.

Unfortunately, lymphosarcoma arising in the retroperitoneal lymph nodes does not produce symptoms until the later stages of the disease and then only because of partial obstruction of the intestinal tract. The only encouraging feature of this disease is its remarkable radiosensitivity which will permit salvage of some patients, providing the diagnosis is made early enough.



FIG. 4. Retroperitoneal teratoma removed from a three week old infant female. Cystic areas are present. The kidney was removed because of adherence to the tumor.

Summary

Thirty-two infants and children with a retroperitoneal tumor treated at Vanderbilt University Hospital have been reviewed. The finding of a retroperitoneal mass, regardless of its size, should arouse the examiner's suspicion of malignancy since 30 of the 32 in this series were malignant.

The survival rate of patients with Wilm's embryoma and neuroblastoma is significantly higher for those under two years of age, suggesting a congenital origin. These two neoplasms form the largest group of retroperitoneal tumors in childhood. The best chance for recovery when dealing with embryomas and neuroblastomas is resection of the mass and immediate postoperative irradiation to the renal fossa. Preoperative irradiation is not advised.

Certain clinical features of teratomas, lymphosarcomas, and adrenocortical tumors have been discussed briefly. A plea is made for early discovery and immediate, aggressive surgical treatment of retroperitoneal tumors.

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Discussion

CHARLES R. ZIRKLE, M.D. (Knoxville). As has been stated by Dr. Holcomb, the three most common retroperitoneal tumors of children are, first and foremost, the embryonal carcinoma, secondly, the neuroblastoma, and thirdly the teratomas. The cases reported agree, I believe, with all series in their malignant nature, and the cure rate approximately the same. I do not believe there is any great disagreement as to the type of therapy indicated for these tumors but only the time interval as to irradiation. I am in thorough agreement with the idea of early surgical extirpation of these tumors and post-operative irradiation. It is not, in my opinion necessary or advisable to do needle biopsies, as has been suggested by the proponents of preoperative X-ray therapy. This procedure to my mind only tends to spread the lesion. I am of the opinion that all of these tumors should be approached through the abdomen, or a combined thoracoabdominal incision and that the flank incision has no place in attacking this problem, though I imagine the urologist would take issue with this statement. Personally, I prefer a transverse type incision as it heals better and with fewer hernias, in my hands. I would like to further emphasize Dr. Holcomb's remarks in reference to early ligation of the renal veins when dealing with embryomas. As has been proved these tumors tend to grow into the veins and are easily dislodged during manipulation. This was forcefully brought out in one of his cases by an operative fatality, due to a tumor embolus, and I am sure this occurs less dramatically in the form of smaller nonfatal emboli which subsequently show as pulmonary lesions and death.

Most of these tumors can be surgically excised if patience is used, and the time involved will be rewarded in survival of these children.

I would like to make a few remarks, as to the general care of children at the time of operation, especially in procedures of great magnitude. As we all know children will stand extensive surgery if the blood volume and oxygen concentration is maintained, if tissue is not mauled and if excessive heat loss prevented. I am convinced that a polyethylene catheter should be in place, adequate blood on hand and a competent anesthesiologist at the head of the table.

I would like to commend the essayists on an excellent paper, and agree with their plea for early diagnosis and aggressive surgical treatment.

Heart disease in pregnancy is an important subject for the family physician and obstetrician. So much depends upon the proper management of the condition during pregnancy, as well as evaluation after delivery in anticipation of subsequent pregnancies.

THE MANAGEMENT OF HEART DISEASE IN PREGNANCY*

FRANK LONDON, M.D., Knoxville, Tenn.

The cornerstone of management for all patients with heart disease is, of course, a correct diagnosis. Pregnancy with its physiologic circulatory alterations, its increased metabolic load, and its associated changes in the shape of the abdomen and position of the diaphragms compounds this problem. As a practicing cardiologist, I find that I ask myself the question, "Is there heart disease present" as often, or more often than I try to decide what type of heart disease is present, or how the heart disease which is present should be managed. I would like, therefore, to include in this discussion a brief review of the circulatory and respiratory alterations inherent in the pregnant state. These alterations produce symptoms and signs, (such as dyspnea, cardiac murmurs, and leg edema), which may lead the unwary to a definite diagnosis of heart disease. In view of these problems one must insist on certain objective criteria on which to base the diagnosis of heart disease during pregnancy. These criteria will be outlined. Finally, the management of these patients, once the diagnosis has been established, will be reviewed from the standpoint of the cardiologist, the obstetrician, and the cardiac surgeon.

Physiologic Changes in Pregnancy

The normal physiologic processes of pregnancy produce a number of alterations which effect the function and status of the cardiorespiratory system. These changes may be divided into the following general categories: changes in volume and composition of body fluids, changes in the cardiac rate and volume flow, changes in the mechanics of ventilation, and changes in total metabolic requirements of the body.

Numerous investigations have been car-

ried out to study changes in total body water, plasma volume, red cell mass, and individual body-fluid compartments.¹⁻⁵ Though the technics of these investigators differ, the latest results using heavy water, radiosodium, antipyrine and radioactive red cells are in striking agreement. Table 1

Table I
CHANGES IN TOTAL BODY WATER DURING PREGNANCY—AVERAGE OF 6 PATIENTS*

	Weight Gain	% Total Body H ₂ O	Absolute Change
18 Wks.	1.0 KG	55.3%	32.6 Liters
Time 36 Wks.	10.3 KG	54.4%	36.6 Liters
Post Partum	4.1 KG	51.9%	31.5 Liters

(From Hutchinson Etal)

shows data calculated by me from the work of Hutchinson, Plentl, and Taylor³ showing the average weight gain, per cent of total body water and absolute rise in total body water in 6 pregnant women studied by the isotope dilution technic. These data indicate a rise of about 5,000 cc. in total body water during the average normal pregnancy. Figure 1 shows the reported data of Caton and associates⁶ who used radioactive red blood cells to study the red cell mass, plasma volume and total blood volume in twelve normal pregnant women. These data show clearly the striking rise in all three components to the 30th week and then a steady fall thereafter. It is important to notice that the plasma volume

*From data of Hutchinson, D. L., Plentl, A. A., and Taylor, H. C., Jr.: The Total Body Water and the Water Turnover in Pregnancy Studied with Deuterium Oxide as Isotopic Tracer, J. Clin. Invest. 33:235, 1954.

*Read before the Meeting of the Tennessee State Medical Association, April 9, 1957, Nashville, Tenn.

Changes in Red Cell Mass, Plasma Volume, and Whole Blood Volume during Pregnancy — 12 Patients

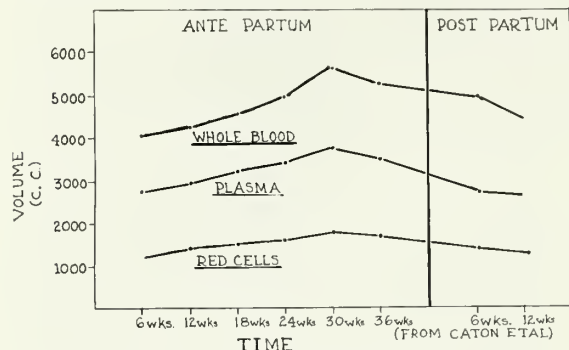


FIG. 1. Adapted from data of Caton, W. L., Roby, C. C., Reid, D. E., Caswell, R., Maletskos, C. J., Fluharty, R. G., and Gibson, J. G., Jr.: The Circulating Red Cell Volume and Body Hematocrit in Normal Pregnancy and the Puerperium, *Am. J. Obst. & Gynec.* 61:1207, 1951.

falls abruptly to normal at delivery, but the red cell mass and total blood volume remain elevated well into the puerperium. The importance of these observations in the management of the pregnant cardiac will be discussed later.

Since 1915, using a variety of technics,^{7, 8} there have been numerous studies of cardiac output in pregnancy. Burwell, Strayhorn and their collaborators⁷ here in Nashville were among the first to carefully document

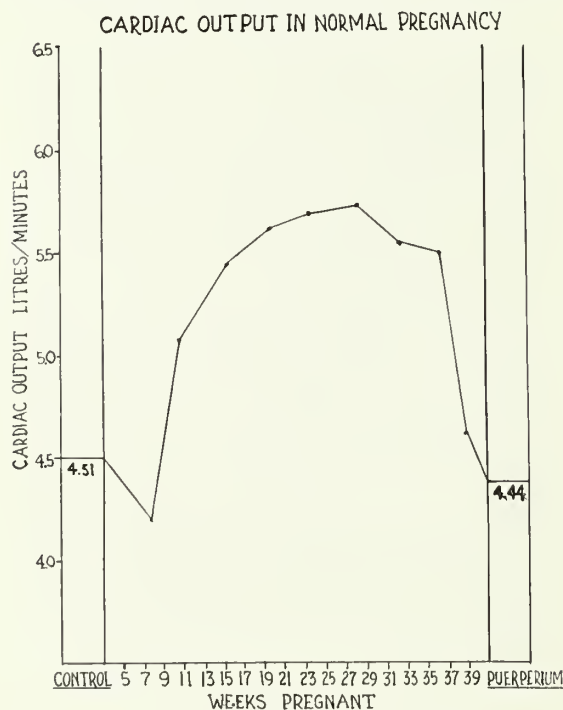


FIG. 2. Adapted from data of Hamilton, H. F. H.: The Cardiac Output in Normal Pregnancy, *J. Obstet. & Gynec. Brit. Emp.* 56:548, 1949.

the full course of the cardiac output during pregnancy and the puerperium. The most complete study is that of Hamilton⁸ using right heart catheterization. Figure 2 shows the results of her studies in 68 pregnant women compared to 24 normal nonpregnant women and 7 women in the puerperium. These data clearly show the striking rise in cardiac output beginning about the 10th week and rising to a peak about the 30th to 36th week and then falling sharply before term to near normal levels. Associated with these changes in volume flow during pregnancy is a tendency for the pulse rate to follow the changes in output. The blood pressure is ordinarily not altered much, or the mean pressure drops slightly, (i.e. peripheral resistance decreases during pregnancy).

Finally, it is important to realize that this rise in output is out of proportion to the increase in oxygen consumption. This means that the oxygen extraction per liter of arterial blood falls during the peak circulatory load of pregnancy. Figure 3 taken

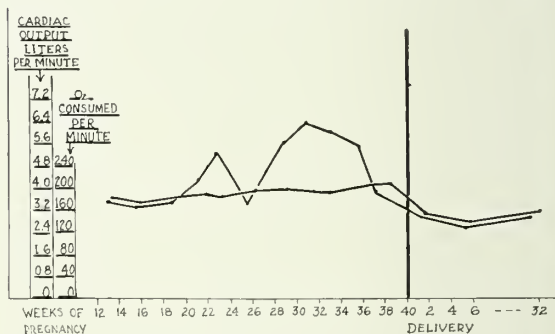


FIG. 3. Adapted from data of Burwell, C. S., Strayhorn, W. D., Fleckinger, D., Corlette, M. B., Bowerman, E. P., and Kennedy, J. A.: Circulation During Pregnancy, *Arch. Int. Med.* 62:878, 1938.

from the data of Burwell and collaborators shows this relationship. This gives rise to an interesting speculation as to the cause of this disproportionate rise in cardiac output. Burwell has suggested that before senescence the placenta may act as an arteriovenous fistula¹ though this is by no means established.²

Most early studies of pulmonary ventilation were limited to studies of vital capacity. Although earlier studies had indicated the vital capacity was diminished in pregnancy, in 1938 Burwell and collaborators,⁷ and Thomson and Cohen⁹ clearly demonstrated

that this was not the case. Cugell, Frank, Gaensler, and Badger¹⁰ have recently published extensive studies on pulmonary function in normal pregnancy. This data is summarized in table 2. There is no change

Table 2

PULMONARY FUNCTION IN PREGNANCY*

Ventilation Volume	Normal	Increased
O ₂ Consumption	Normal	Increased (Not Proportional to Volume)
Ventilatory Rate	Normal	Normal
Vital Capacity	Normal	Normal
Residual Air	Normal	Decreased
Expiratory Reserve Volume	Normal	Decreased
Inspiratory Reserve Volume	Normal	Increased
Nitrogen Washout	Normal	Normal
Arterial O ₂	Normal	Normal
Arterial PCO ₂	Normal	Decreased

in the vital capacity or maximum breathing capacity. The expiratory reserve volume and functional residual air are decreased, and the inspiratory reserve capacity is increased. The volume of ventilation is increased out of proportion (and without an increase in rate) to the increase in oxygen consumption. The intrapulmonary mixing of gases remains normal.

An important and interesting facet of their study was an attempt to correlate in the individual patients of this series changes in pulmonary function and the subjective sensation of dyspnea. There was absolutely no correlation. They concluded that the dyspnea was due to hyperventilation out of

proportion to the metabolic demand (since it exceeds the oxygen consumption rise and the PCO₂ is low) and that the dyspnea was either due to overactivity or hypersensitivity of the respiratory center, or unusual and unidentified stimuli acting on this center.

One must conclude then, that if there is a measurable ventilatory defect during pregnancy it cannot be attributed to the pregnancy but must be indicative of cardio-respiratory disease.

The rising oxygen consumption throughout pregnancy, of course, reflects the increased metabolic load which this condition imposes. We have already seen that both the respiratory volume and cardiac output rise out of proportion to this load though they may be in some way governed by it. According to Burwell,¹ Metcalf and Romney, using Kety's nitrous oxide technic, have demonstrated that the uterus and its contents account for 70 to 80 percent of the increased maternal oxygen consumption during pregnancy. It seems likely that the increased cardiac and respiratory work accounts for most of the rest. The role of the thyroid in this problem is provocative.

In addition to these physiologic changes in pregnancy there is the problem of stress and strain on the cardiovascular system at the time of delivery. Sampson and co-workers¹¹ attempted to assess this problem by measuring oxygen consumption during active labor. They showed modest to moderate rises indicating increased muscular work during this period. No generalizations could be drawn from this study. Woodbury and associates¹² have shown that marked rises in systemic arterial pressure occur if the patient is allowed to bear down during labor. The heart rate is apparently reflexly controlled by these blood pressure changes. In general, it appears that a heart that can tolerate the peak circulatory load of pregnancy can also tolerate normal delivery (if there are no important obstetric complications).

Symptoms and Signs Suggestive of Cardiac Disease

Let us turn now briefly to some of the misleading signs in pregnancy which suggest heart disease.

*Compiled from data of Cugell, D. W., Frank, N. R., Gaensler, E. A., and Badger, T. L.: Pulmonary Function in Pregnancy, *Amer. Rev. Tuberc.* 67:568, 1953.

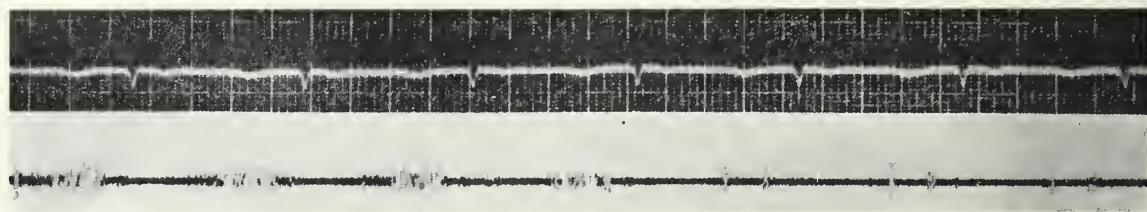


FIG. 4. Simultaneous phonocardiogram and electrocardiogram. On reducing the pressure on the recording microphone and a loud systolic murmur appears.

(Reproduced by courtesy of R. P. Grant and the American Heart Journal, 52:944, 1956.)

The first of these is the presence of cardiac murmurs. A systolic murmur is to be expected and can almost always be heard in pregnant women at the 26th to 36th week. These murmurs are usually soft and blowing, but on occasion may be quite loud (Grade IV) and harsh. The genesis of these murmurs is variable. In most instances they are produced by augmented flow through normal valve orifices but occasionally they may be produced by extracardiac phenomena. Figure 4 shows the phono-cardiogram of a patient studied by Dr. Robert P. Grant at the National Heart Institute¹³ in which there was a loud systolic murmur and thrill which was due to augmented flow through dilated mammary arteries. Soft diastolic murmurs may also occasionally be heard and recorded in pregnant women with normal hearts but these are much less common.

Exertional and recumbent dyspnea is another common symptom in pregnancy which may raise the question of heart disease (particularly in the earlier stages of pregnancy). This is notoriously unreliable. There is no objective evidence of encroachment on pulmonary function¹¹ and, as we have already seen, the dyspnea has the physiologic characteristics of primary central overstimulation. This symptom may occur in the first few weeks of the normal pregnancy.

Fluid retention (salt and water) is the third major problem in pregnancy which raises the question of heart disease. Edema and excessive weight gain is a common problem. The mechanism of sodium and water retention has not been clearly elucidated in either heart disease or pregnancy. Whether these are similar fundamentally or different the end results are identical.

Diagnosis of Heart Disease

Because of these problems one must insist on objective criteria for the diagnosis of heart disease in the pregnant state. Table 3 lists the most important of these

Table 3
OBJECTIVE CRITERIA FOR THE DIAGNOSIS OF HEART DISEASE IN PREGNANCY

1. Presence of known disease prior to pregnancy
2. Marked cardiac enlargement by X-ray
3. Severe EKG abnormalities
 - a. Left bundle branch block
 - b. Right ventricular hypertrophy
 - c. Old infarction
4. Elevated venous pressure in arms
5. Slowed circulation time
6. Decreasing vital capacity
7. Demonstration of elevated filling pressures, shunts, or valve pressure gradients by cardiac catheterization

criteria. Obviously, if a patient has known heart disease prior to pregnancy there is no problem. Marked cardiac enlargement which is completely out of proportion to changes which could be explained by rotation of the heart or elevation of the diaphragms is reliable evidence of heart disease. Minor electrocardiographic changes such as axis shift or T-wave changes or even arrhythmias are not indicative of heart disease. Severe changes, however, such as left bundle branch block, right ventricular hypertrophy, and old myocardial infarction are usually conclusive. Normal pregnancy does not produce any rise in right atrial or peripheral venous pressure (excluding the legs which may be effected by the enlarged uterus). Thus, if a patient has peripheral edema and the venous pressure in the arms is normal at rest and after the Pasteur-Rondot maneuver one may rather confidently exclude the heart as a cause of the edema. Since, as we have seen, the cardiac

output rises during pregnancy, any slowing of the circulation time must be viewed with suspicion. Many workers have now demonstrated that the vital capacity does not decrease in normal pregnancy. This simple test then becomes a valuable tool for demonstrating early heart failure. In fact, a diminishing vital capacity as pregnancy progresses is one of the best signs of heart disease² (if progressive pulmonary disease can be excluded). Finally, of course, cardiac catheterization with its assessments of filling pressures, shunts, and valve pressure gradients is an agent par excellence for the demonstration of heart disease.

Management of Heart Disease

Now, when the question has been definitively answered that the patient does have heart disease the problem of management of the heart disease arises. To assess this problem let us look at the types of heart disease pregnant women have. Table 4

Table 4
ETIOLOGY OF HEART DISEASE IN 201
PREGNANT WOMEN*

A. Rheumatic Heart Disease	178
1. Mitral stenosis	125
2. Mitral insufficiency	39
3. Aortic insufficiency	8
4. Aortic stenosis	6
B. Congenital Heart Disease	19
C. Hypertensive Heart Disease	3
D. Unknown Etiology	1

shows Burwell's experience at the Boston Lying-In Hospital over a three year period. Mendelson,¹⁵ at the New York Lying-In Hospital, found that 90 percent of 2,932 pregnant cardiac patients had rheumatic heart disease, and 75 percent of these had mitral stenosis. This data is important because one notes immediately that over three-fourths of these patients fall into the group in whom surgery may offer hope of dramatic amelioration (or actual cure) of the heart disease. For practical purposes this means that almost all of these patients must be considered potential candidates for rehabilitation from the cardiac standpoint.

Thus, no matter how the present pregnancy is handled, future pregnancies should not be prohibited and sterilizing procedures should rarely, if ever, be done for cardiac indications.

Let us turn to the handling of the present pregnancy. I feel that the management rests on several factors: the stage of pregnancy when the patient is first seen, the functional severity of the heart disease, the availability and opportunity for ideal medical care, and the risk of obstetric or cardiac surgical procedures which might modify the pregnant state or the cardiac status.

There is general agreement that patients seen after the 16th and 20th week of pregnancy should be treated medically regardless of the severity of the heart disease. This means in practical terms that abdominal interruption of pregnancy should not be practiced. Studies have shown that this is more hazardous than allowing the pregnancy to progress.¹⁵ There is also an almost unanimous opinion that cesarian section has no place in the management of pregnant cardiac.^{15, 17} If these patients tolerate the circulatory burden of pregnancy they will almost invariably tolerate a skillful vaginal delivery at term (when the circulatory burden has diminished considerably). Cesarian section should be done only for obstetric indications.

The remaining problem which concerns the obstetrician and the cardiac surgeon is how should Class 3 and Class 4 cardiac patients seen in the first 16 to 20 weeks be managed. Enthusiasts for medical management such as Gorenberg¹⁷ believe that therapeutic abortion and cardiac surgery are never indicated, and that all such patients should receive "ideal" medical care in a hospital. This medical regimen will be detailed later. Others such as Mendelson,¹⁵ and Hall and Knapp¹⁶ recommend cardiac surgery for such patients if careful physiologic studies indicate pure mitral stenosis. If a remediable lesion is not present, and particularly if the patient cannot avail herself of "ideal" medical care, interruption of the pregnancy is probably in order if there is no improvement on medical therapy.

My present practice is to recommend car-

*Taken from paper of Burwell, C. S.: The Management of Heart Disease in Pregnant Women, Bull. Johns Hopkins Hosp. 95:130, 1954.

diac surgery during the first trimester only in the following circumstances: (1) patent ductus arteriosus with considerable cardiac enlargement; (2) coarctation of the aorta with severe hypertension; (3) severe tight mitral stenosis (with a small heart) in a woman who had symptoms of pulmonary congestion on adequate therapy either prior to pregnancy, or during a previous pregnancy; and (4) pure valvular pulmonic stenosis with very high pressure gradients (over 150 mm. Hg.) across the pulmonic valve. The further development of cardiac surgery will doubtless modify these ideas. If patients remain as Class 4 cardiacs on medical therapy and do not fall into the above groups, I believe they are best managed by interruption of the pregnancy. Class 3 cardiac patients should be treated medically unless they fall into the above categories.

What does proper medical management of the pregnant patient with heart disease consist of? It differs from that of the usual patient with heart disease in several ways. First there is a predictable rise in cardiac work as pregnancy progresses. This must be met by concomitant reduction in muscular demands on the heart for extra work. In practical terms this means these patients (Class 3 and 4) must be on bed and chair rest throughout most of the pregnancy. Experience has shown that this is done best in the hospital. Secondly, every effort must be made to avoid those situations which increase cardiac work. These include intercurrent infections, anemia, emotional disturbances, excessive weight gain, and the like. These must be controlled by appropriate means. Finally, diet, digitalis and diuretics must be used adequately but with more caution than in the nonpregnant state.

Patients in functional Class 1 and 2 must be followed carefully with frequent determinations of vital capacity and venous pressure in order to determine the earliest stage of further cardiac deterioration. If deterioration begins they are then treated as outlined above.

Frequently the problem of whether a patient has heart disease of functional Class 1 cannot be resolved until after the preg-

nancy has terminated. All such patients should be managed as patients with heart disease during this period.

Cardiac arrhythmias are common during pregnancy. Heart disease may or may not be present. The condition can become serious if allowed to go untreated. These situations usually respond well to standard forms of treatment.

There is growing and impressive evidence that the pregnant state predisposes to dissecting hematoma (dissecting aneurysm) of the aorta. Since there is now surgical treatment available for some patients with this catastrophic complication, it must be searched for with increased diligence. Patients already known to be susceptible to this malady (as in coarctation of the aorta and in Marfan's syndrome) should be under particularly close scrutiny.

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Discussion

DR. DAVID STRAYHORN (Nashville): Dr. London has presented in very concise form the present status of our knowledge concerning the circulatory and respiratory changes occurring during pregnancy, and their relationship to the diagnosis and management of heart disease in pregnancy. My interest in this subject has extended over many years, and a report on this subject was presented to this same association 23 years

ago. It might be well to consider what we knew then as compared to the present and emphasize again points Dr. London has made.

Twenty years ago our knowledge of the behavior of the cardiac output and the oxygen requirements were accurate, as compared to today's standards. That there was an increase in blood volume was accepted, but actual measurements of this had to await more refined technics. Much more precise information regarding pulmonary ventilation and work requirement during labor has been added.

In the area of management the most noticeable change has been the elimination of operative delivery on the basis of cardiac indications alone. Even in the 1930's there was full realization that, after the first trimester, it was hazardous to try to empty the uterus prematurely, and safer to treat medically and carry the patient to term. There was, however, the feeling that in many instances, especially in primipara, the strain of labor would be greater than a cesarian section, performed by a well co-ordinated team. We no longer believe this.

Finally, I wish to re-emphasize that the early recognition of the cardiac patient is most important to the obstetrician. Since over 90 percent of the cases of heart disease in pregnancy are due to mitral stenosis, dyspnea and palpitation will be the presenting symptoms. Alertness in observing these abnormal symptoms in the pregnant patient may initiate examinations establishing the presence of heart disease. Likewise, careful attention to these symptoms in the known cardiac provides the best basis for management and prognosis.

In closing, I wish to point out to you the thoroughness and conciseness with which Dr. London has presented this subject.

These cases should make one hesitate in the unwarrantable use of the "tranquilizers."

HABITUATION TO TRANQUILIZING DRUGS

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A few years ago the tranquilizing drugs were introduced on the pharmaceutical market. These medications have made a tremendous impact on the treatment of emotional and mental illnesses, and their use became more widespread than any other form of drug used previously for psychiatric illnesses. It has been claimed that these ataractics do not create habituation or dependency. Only Lemere's¹ article has called attention to a few cases of habituation to meprobamate (Miltown). In this light it might be of value to discuss the following cases:

Case 1. A 53 year old male physician was admitted to the Vanderbilt University Hospital because of depression.

The onset of his illness was dated approximately four months prior to admission, at which time the patient's 19 year old daughter announced marriage plans. The patient had great difficulty in accepting the daughter's intentions; he became very anxious and depressed. He prescribed for himself increasing amounts of meprobamate and chlorpromazine. The initial dosage was one or two 400 mg. tablets of meprobamate daily, and three or four 50 mg. tablets of chlorpromazine nightly upon retiring. This dosage at first produced subjectively a feeling of well being. He soon felt the need to increase his daily amounts in order to maintain the desired relaxing effects. A satisfactory regimen of up to 2400 mg. of meprobamate daily and 1000 mg. of chlorpromazine nightly was finally reached and continued until approximately two weeks prior to admission.

At that time a Parkinsonism-like syndrome was noted, including unsteady gait, blurred vision, a staring gaze, and an immobile facial expression. A physician friend advised complete discontinuance of the meprobamate and a reduction in the dosage of the chlorpromazine to 200 mg. nightly. Following this suggested change in his tranquilizing regimen the patient began to complain of increasing "nervousness," tremulousness, weakness, insomnia, hyperhidrosis, anorexia, occasional vomiting, impotence, and increased irritability. The patient described his condition as, "like going through hell." He likened it, with the exception of abdominal cramps, somewhat to the effects of narcotic withdrawal (which he had

experienced previously). He began to take 6 to 8 pentobarbital capsules nightly for insomnia. He was admitted to this hospital.

Past history revealed that the patient's mother was the dominant figure in the home. She controlled his passive father; temper outbursts were frequent if her wishes were not observed. The patient recalled his mother as, "always telling me what to do and seeing to it that I did it." He would always run from a fight because his mother told him it was wrong to fight. As a child he was weakly and appeared undernourished.

He describes himself as being extremely shy in his youth, avoiding many social events. He suffered a "nervous breakdown" at age 16, but finally finished high school and began college as a preministerial student. Upon losing a college debate the patient said he would never be able to preach and changed to a premedical curriculum.

After his internship the patient married; he wanted to take his mother on the honeymoon but his wife's objections prevented this plan. Following marriage the patient's parents lived with him and his wife for 10 years. He started drinking heavily following the birth of their first child, and continued this several years until a suicidal attempt and impending divorce proceedings by his wife apparently caused him to stop. But soon thereafter he became addicted to narcotics. For this latter difficulty the patient was treated first in a private hospital and later (about four and one-half years ago) in a government hospital for a six months' period. During the last several years of his medical practice the patient's wife has been his office assistant and receptionist. She has supervised all his activities at his request; he became increasingly dependent on her. On two occasions in his life the patient has become depressed to the point of attempting suicide, once by ingesting large quantities of a sedative and once by parking his car on a railroad track while intoxicated with alcohol.

Examination. On admission to the hospital he appeared well nourished, but obviously in emotional distress. The eyes exhibited a staring gaze with a rare blinking of the lids. The blood pressure was 155/95, pulse, 120, respiration, 22; the skin was moist, especially the hands and feet. The thyroid gland was not enlarged. Neuromuscular examination revealed a generally agitated patient; his hands exhibited a fine tremor. The deep tendon reflexes were slightly depressed in the lower extremities. Some generalized muscular weakness was present; muscle tone showed evidence of cog-wheel rigidity. Hoffman sign was bilaterally positive but the Babinski was

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negative. The gait was unsteady with a broad base.

Laboratory studies revealed a negative urinalysis; a WBC of 10,500, a PCV of 50.0, icteric index of 7.5, sedimentation rate of 3.0, negative STS, and a protein bound iodide of 4.7 mc. gm.

Course. During the patient's stay in the hospital he was treated with glutethimide (Doriden), 1.0 Gm. at bedtime, with one repeat dose as needed and mephenterimine (Wyamine), 25 mg. twice daily. The patient's course in the hospital was marked by insomnia, hyperhydrosis, anorexia, tremulousness, agitation, and depression. The described neurologic signs such as gait, muscle tone, etc., improved over the next three weeks.

Case 2. A 30 year old physician was seen because of "drug addiction since medical school."

Because of his great fear of failure in his studies the patient drove himself relentlessly in maintaining his scholastic marks and consequently felt the need for both sedatives and stimulants. Sodium secobarbital (up to 1.0 Gm. daily) and amphetamine (up to 50 mg. daily) were used. Following the introduction of the tranquilizers the patient substituted chlorpromazine for the secobarbital. After several months he discontinued the use of chlorpromazine and began taking meprobamate, 400 mg. 4 times daily. When the dosage became ineffective he increased the amount gradually up to 4800 mg. daily. On attempting to discontinue the use of the drug, he became unable to concentrate and was extremely anxious; a fine tremor of both hands was noted. In order to relieve the symptoms the medication was resumed.

His *past history* revealed the patient to be the youngest of three sons. His father was a college teacher, self-made and a hard worker. He was strict, always demanding outstanding scholastic achievements of his sons. The father was especially strict with the oldest son and the patient remembers seeing the father give harsh whippings to the brother for minor wrongdoings or poor grades at school. During childhood this brother developed severe personality problems. The mother was not very demonstrative in her affections. She withheld her approval of her children unless they proved to be successful. She used the father as a threat; "Your father will not like this when he hears about it—he will whip you for it."

The patient recognized early in his life that to be accepted he had to prove himself in school or in other activities. Making poor grades would bring him punishment and humiliation. The anticipation of being scolded or reprimanded was anxiety-provoking. These attitudes became increasingly important when he attended medical school. He had to make good grades to win recognition and to avoid disapproval. He became uncertain, anxious, and started to use sedatives and stimulants in an attempt to regulate his studies.

Discussion

Both cases reveal strong dependency

needs and marked insecurity. They made previous attempts to overcome anxieties by dependence on drugs. In one case successful withdrawal from drugs had been accomplished until an emotionally charged experience caused the return to the heavy use of relief of anxiety medications for the tranquilizers, at present. They used tranquilizers in the same manner as narcotics, barbiturates, and alcohol had been used previously. A general increase in dosage was required to maintain the desired effects. Attempts to discontinue the drugs brought withdrawal symptoms. These patients fulfilled the criteria for drug habituation, a condition which is characterized by a psychic craving manifested when the drug is withdrawn.² From these cases one must assume certain implications regarding the use of the tranquilizing drugs:

1. The possibility of drug habituation in emotionally dependent patients is a very real possibility.
2. There is a tendency to require increasing amounts of meprobamate to maintain desired effects.
3. Withdrawal symptoms may occur upon discontinuing the drugs.
4. Only temporary use of the ataractics is warranted, particularly in neuroses. If the patient's problems are sufficiently severe to justify long-term medication, psychotherapy is essential to solve the underlying conflicts.
5. The drugs should be dispensed only on prescription and not refilled without specific approval of the attending physician.
6. Care should be exercised in prescribing the drugs, and persons other than the original recipient of the prescription should not be permitted to use the prescription or the drugs.
7. Particular caution must be used in patients with a previous history of marked dependency reactions and habituation or addiction to other medications.

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The curious intra-uterine infection of infants with the protozoan parasite "Toxoplasma" is widespread though rare. This intracellular organism causes several pictures in infants, and its diagnosis, as described in this paper depends upon certain laboratory procedures.

LABORATORY AIDS IN THE DIAGNOSIS OF TOXOPLASMOSIS*

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Although toxoplasmosis in man is only recognized infrequently, it is occasionally a concern of the pediatrician, the ophthalmologist, the internist, and perhaps other specialists. In establishing a diagnosis which may be suspected upon clinical grounds, the physician will look for help from the pathologist and from the laboratory. It is the purpose of this paper to review the laboratory procedures which may be used in diagnosis, and to discuss their availability, their application, their interpretation, and their limitations. It is our hope that this outline may be found useful to laboratory personnel who are unfamiliar with the technics, but who may be called upon for aid in the future.

As a background for the discussion, it is necessary to give a short summary of the human forms of toxoplasmosis. There are three or four principle known human manifestations which may be encountered, and the laboratory procedures to be used will vary somewhat depending upon which particular manifestation is under study.

First, there is the classical congenital form of the disease which is contracted by the fetus from the mother *in utero*, and which in its typical form presents a characteristic tetrad of signs: chorioretinitis, hydrocephalus, cerebral calcifications, and psychomotor disturbances. Though this is the typical picture, some signs may be lacking and others present, but it is not the province of this paper to discuss these variations.

Second, toxoplasmosis may present itself as an acute, acquired exanthematous infection simulating clinically some of the

rickettsial diseases. Fortunately, this form of the disease, which is severe and presents great diagnostic difficulties, is only rarely seen.

More frequent in areas in which intensive study has been done, is a third form of toxoplasmosis which is characterized principally by lymphadenopathy with or without fever. Most patients recover from this acquired form of the disease, and it must be distinguished from infectious mononucleosis and other diseases in which lymphadenopathy is prominent.

Finally, a fourth form of the disease characterized by a granulomatous uveitis or chorioretinitis is being recognized with increasing frequency by the ophthalmologist working in conjunction with the internist and the laboratory. This disease is sometimes acquired postnatally or, may in some instances, represent a residuum from a non-severe congenital infection. It must be differentiated from other infections causing similar lesions, particularly tuberculosis. This form of toxoplasmosis may well be the most frequent, but the limitations of the diagnostic measures now available make it possible to establish only presumptive diagnoses in most cases.

The laboratory aids in the diagnosis of toxoplasmosis may be subdivided into two main categories: immunologic tests and xenodiagnostic means, through the growing of organisms in laboratory animals using biopsied tissues or tissues taken at autopsy. In the paragraphs which follow, we shall outline the accepted procedures in each of these categories, following which we shall describe their application to a typical case which we studied recently.

Immunologic Tests in the Diagnosis of Toxoplasmosis

Dye test. There are three principal immunologic procedures, the most important

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of which is the dye test which was developed by Sabin and Feldman¹ just a few years ago and which has since come into very wide use over the entire world. This procedure is an *in vitro* neutralization test, and depends for its effect upon the fact that an antibody is produced in response to toxoplasmosis, which in the presence of a suitable accessory factor acts upon the parasites in such a manner as to modify the staining reaction of the cytoplasm to alkaline methylene blue and certain other dyes. This basic reaction is shown diagrammatically in figure 1.

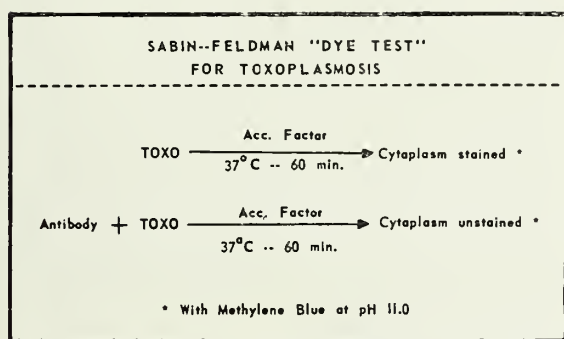


FIG. 1. Diagrammatic representation of the basic reaction utilized in the dye test.

In practice the test is carried out in the the following manner: First, dilutions of inactivated serum from the patient are made as with other serologic procedures, usually on a four-fold basis. The antigen is prepared by obtaining peritoneal exudate from infected laboratory mice. This exudate, which contains numerous *Toxoplasma* organisms, is diluted to five times its volume with accessory factor serum with a little heparin or other anticoagulant. The serum dilutions are mixed with the antigen preparation in equal volumes and the mixture incubated at 37 C. for one hour. Subsequent to the incubation, methylene blue in alkaline solution is added either to the tube or mixed with the antibody-antigen mixture on a microscope slide. After a few moments the organisms in the mixture are examined, and the proportion of organisms whose cytoplasm fails to stain with the methylene blue is recorded. The endpoint is usually defined as the highest dilution in which half or more of the organisms have lost their affinity for the dye.

The accessory factor mentioned above is

present in normal human blood, and donors are chosen from persons whose sera show no antitoxoplasmic activity whatever. The factor is heat labile and must be stored frozen, preferably upon dry ice. It has much in common with complement and may indeed be composed of complement and other serum factors.

The most difficult phase of the test is the procurement of satisfactory mouse peritoneal exudate antigen. Due to such factors as the possible existence of soluble antigen and the development of immunity in the mice, exudate with organisms which will react properly may only be obtained from mice chosen just at the proper stage of the infection. Washing the parasites in serum-saline in silicone tubes will sometimes result in an increased proportion of satisfactory tests, but most laboratories find it necessary to discard a significant proportion of the tests attempted. Needless to say, it is absolutely essential to maintain adequate controls of known positive sera and of saline or known negative sera, and all tests in which the controls are not satisfactory must be repeated.

These remarks we hope will provide an idea of the nature of the dye test and the technic of carrying it out. For greater detail, reference may be made to Feldman² and to Jacobs and Cook.³

The dye test is useful in studying all of the manifestations of toxoplasmosis in man. In suspected congenital cases, sera from both mother and child should be tested. If the diagnosis is correct, the titer will be high in both, usually 1:1024 or higher in recent cases. There is little to gain from testing subsequent samples except as confirmation, although samples several months after birth may be necessary to exclude the possibility of passive transfer of antibody.

In the acute exanthematous disease and in the lymphadenopathic form it is essential to obtain serologic information throughout the course of the disease, for diagnosis may depend upon the observation of a significant rise in titer during the illness. If this rise in titer cannot be shown, the possibility remains that the positive finding is coincidental and has no relationship to the illness of the patient, since normal persons frequently have posi-

tive titers. If the first specimen is taken early in the course of the illness, it may be negative, or positive at a low titer and following specimens may show higher titers such as are associated with the congenital disease.

In ocular toxoplasmosis, the dye test is also important but cannot alone establish a diagnosis. It is probable that a negative dye test is incompatible with a diagnosis of toxoplasmosis, for Jacobs, Cook and Wilder⁴ found positive sera in all patients from a series in which organisms had been found histologically. On the other hand, the titers in this same series of cases varied from undiluted to 1:2048, thus indicating that the eye disease may be associated with either high or low titers.

In our experience in Memphis, we have observed that in patients with granulomatous uveitis or chorioretinitis presumed to be due to toxoplasmosis, titers have tended to be higher than in normal persons.

We have alluded to the fact that apparently normal persons frequently show positive dye test reactions, and this fact imposes strict limitations on the interpretation of the test. Presumably the positive tests indicate frequent experience of man with this parasite which must, in most cases, produce no notable illness. For that reason the dye test must be regarded as a means of confirmation and support of a diagnosis made primarily on clinical grounds. An exception to this rule would be cases in which serial samples show a significant rise in titer, as such a finding would indicate active current infection. On the other hand negative dye tests, except very early in an illness, probably constitute a good basis for eliminating toxoplasmosis from consideration. Certainly, this is true in the congenital disease and probably in ocular toxoplasmosis.

Once established, the antibody measured by the dye test persists for very long periods, many years in fact, and falls to lower titers only very slowly. This means that the dye test alone will give little information as to whether or not a recent infection is being studied. The use of the dye test with other laboratory measures such as the complement fixation test to some extent overcomes this limitation.

Further limiting the usefulness of the dye test is the fact that it is an expensive procedure which requires the constant maintenance of virulent *Toxoplasma* in the laboratory for obtaining the antigen which consists of living organisms. Since there is usually not a sustained demand for the test and it is difficult, the local laboratory or even the State laboratory could hardly be expected to offer it.

As a result, the dye test is not widely available to the medical practitioner. Probably only four or five laboratories in this country perform it regularly on a large scale. Only a single laboratory, that of the Communicable Diseases Center, in Chamblee, Georgia, conducts it regularly as a physicians' service, and that laboratory limits the test to sera from patients suspected of having congenital toxoplasmosis or patients in which there is question of the occurrence of the acute exanthematous disease. The service is available through the State laboratory which forwards specimens to the Chamblee laboratory.

In the Mid-South area our laboratory has been conducting tests for many physicians with the hope of obtaining leads to recent cases for epidemiologic study. We are also gathering data on the frequency of the disease and are cooperating in studies on therapy. Although we must limit our service, we are glad to cooperate with physicians located reasonably near Memphis, particularly in cases of especial interest and in cases which might provide us with information of value to our research.

Complement fixation test. The complement fixation test, although less versatile than the dye test, sometimes has important applications in the diagnosis of toxoplasmosis. This test is done in a manner similar to other complement fixation reactions, and the antigen is usually obtained either from the peritoneal exudate of mice, is rich in organisms, or from infected chick embryonic material.

In animal and human infections the complement fixation antibody appears later than the dye test antibody. It does not reach the high titers characteristic of the dye test and disappears more rapidly, even though it may persist sometimes for years. For these reasons the complement fixation

test alone is inadequate for diagnosis. Its best use is in conjunction with the dye test, and by means of the two tests it is sometimes possible to obtain evidence as to the stage of the infection. For example, the presence of a high dye test titer with a negative complement fixation test is indicative of recent and currently active infection.

Similarly, recent infection would be suspected in a patient whose dye test titer remained stationary but whose complement fixation titer rose significantly during the period of observation.

The complement fixation test is of little use in the diagnosis of ocular toxoplasmosis because it is probable that many of these are chronic infections which have endured for a long time so that the complement fixing antibodies may have disappeared. Certainly the data of Jacobs and associates⁵ show that the histologically diagnosed cases studied serologically were frequently negative to complement fixation.

As in the case of the dye test, the complement fixation test is not generally available to the medical practitioner. Most of the laboratories performing this test are research organizations and must limit the number of tests which are done as a service.

Skin test. The skin test or dermal sensitivity test is performed by injecting *Toxoplasma* complement-fixing antigen intracutaneously. In many persons a delayed, tuberculin-type of skin reaction will follow. Studies have shown that most persons with positive skin tests also show dye test reactions, but the dye test may vary from as low as 1:4 to 1:4096 or higher. On the other hand some persons that fail to show skin reactions do have positive dye tests; thus a negative test is of little diagnostic value.

The skin test is of little value in acute infections, since it cannot be used quantitatively and since it does not always give positive results. The test may be of use, however, in epidemiologic studies and may have a place also in the study of ocular toxoplasmosis. This last is true particularly because the dye test is not generally available to the ophthalmologist. In the eye

cases a positive skin test is compatible with a diagnosis of toxoplasmosis made upon clinical grounds, but a negative test is of little value for, as mentioned above, persons with negative skin tests sometimes show positive dye tests.

The skin test does have the advantage of being available to the practitioner. Up to this time the antigen has been supplied as a complimentary service by Eli Lilly and Company.

Other immunologic procedures. The rabbit neutralization test developed by Sabin and Ruchman⁶ has been outmoded by the dye test as it is less precisely quantitative and much less economical. Although its ultimate practical value cannot yet be assessed, Jacobs and Lunde⁷ have recently adapted the hemagglutination procedure⁸ to the study of toxoplasmosis. This method, though somewhat complicated, has the advantage of using a nonliving antigen which may be prepared in quantity for subsequent use. Results so far have shown it to compare well with the dye test both in sensitivity and in specificity.

Xenodiagnostic Procedures

The immunologic tests we have described are of great value, but frequently do not provide data which make possible unequivocal diagnosis. The recovery of parasites through the inoculation of laboratory animals with tissue of the patient provides the best possible diagnostic evidence. The following paragraphs outline measures which may be taken in the various forms of the disease.

In congenital toxoplasmosis attempts to isolate organisms may be made in life, using spinal fluid, ventricular fluid, or blood as these tissues are readily available. Frequently material may be obtained when punctures are made for other purposes such as cell counts.

The materials should be collected in sterile containers and, in the case of blood, either heparin or citrate should be used to prevent coagulation. Mice are generally used as the laboratory animal and injection of materials should be done intraperitoneally as large quantities of material may be administered by this route. With blood, as much as one ml., may usually be in-

jected, but it is our practice to give some mice of each group less blood in the event some are lost from the introduction of too much foreign protein material.

In the case of spinal or ventricular fluid, it may be advantageous to centrifuge briskly to bring down any cells and organisms, then re-suspend the sediment in a smaller volume of fluid. This permits larger inocula with presumably a better chance of obtaining infection in the laboratory animals.

As stated above, laboratory mice are the animal of choice for diagnostic purposes, because they are very susceptible to toxoplasmosis and because they are seldom, if ever, found naturally infected. Guinea pigs and rabbits are also susceptible, but spontaneously infected animals are found more or less frequently. For that reason, if circumstances make it necessary to use these species it is the best practice to inoculate them in series of several animals. Should all of the animals of a series develop infection with *Toxoplasma*, one may strongly presume that the tissue from the suspected case was the cause of the infection.

There is some experimental evidence to show that the administration of cortisone increases the susceptibility of mice to toxoplasmosis, or at least makes infections more rapidly demonstrable. For that reason, it is frequently our practice to give 5 mg. of cortisone acetate intramuscularly to each mouse just after it receives the tissue inoculation. On the other hand, cortisone renders the mice more subject to intercurrent infections, and the results of a long series of paired inoculations, with and without cortisone, have not indicated that its use increases the proportion of positive findings in the long run, so the use of this substance is optional.

Should death of the patient occur, inoculation of tissues taken postmortem should be carried out. This is very important as the morphologic identification of the parasite is sometimes questionable, and it is often very difficult to find the parasites which may be widely scattered and not associated closely with lesions.

The most important source of infective material is usually the brain, but the or-

ganisms may sometimes be recovered from a variety of tissues including the liver, lung, spleen, and heart muscle. Material for inoculation should be taken from areas showing gross lesions if such are evident. If gross changes are not noted, bits of tissue from various levels may be pooled for inoculation.

Materials for inoculation should be taken with as little contamination as possible, but it is not usually necessary to obtain them under sterile conditions. The material should be promptly ground either in a Waring blender or by means of mortar and pestle until in a fine state of division. The material is suspended in physiologic saline, usually as a 20 per cent mixture. We usually add, also, a mixture of penicillin and streptomycin for their antibacterial action, as they have no effect on *Toxoplasma*.

The suspension is then drawn into a syringe and injected into animals. We generally use intraperitoneal inoculations of one ml. in mice, although they will usually survive the inoculation of as much as 2 ml. Cortisone acetate may be used as described above.

Mice inoculated with the tissues should be observed, and any animals which die should be examined for *Toxoplasma*. These may be seen in fresh impression smears of the viscera when abundant peritoneal exudate is present. Otherwise, the organisms may be sought in Giemsa-stained impression smears of the viscera or in thin smears of brain, liver, or spleen made by pressing small bits of tissue between two slides. These smears should be fixed in absolute methyl alcohol before staining. The parasites, which are shown in figure 2, appear as oval or crescent-shaped bodies about 5 microns long by 1.5 to 2 microns broad with bluish-staining cytoplasm. The only structure visible within the organism is the reddish-staining nucleus.

After one to two weeks it is wise to sacrifice a mouse and make examinations of fresh and stained impression smears of the viscera. Organisms may be found frequently at this time, even though they may be recovered only with difficulty in a subsequent passage. If inoculated mice survive and no parasites are seen in sacrificed mice, either of two procedures may be fol-

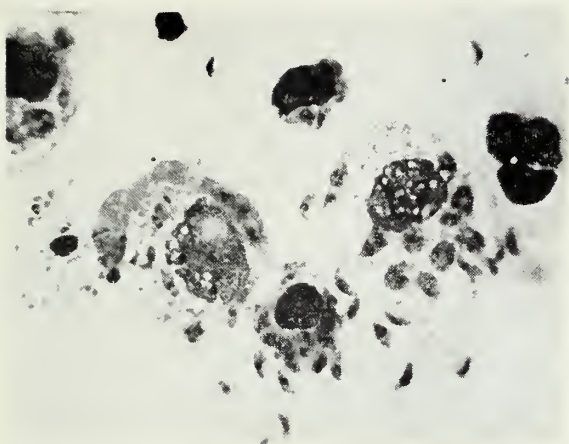


FIG. 2. Giemsa-stained impression smear of viscera of mouse infected with *Toxoplasma gondii*. Note crescent-shape extracellular parasites and parasites within large mononuclear exudate cells. Magnification about 1600 X.

lowed, the choice being determined by whether or not the dye test is available.

If the dye test is not available, blind passages should be continued for three or four additional passages at intervals of about one to two weeks before concluding that parasites cannot be recovered from the tissue in question.

On the other hand, if the dye test is available, a much superior procedure is practicable. Surviving mice of the original passage should be kept for 6 or 8 weeks, then sacrificed. Blood should be taken for dye testing and several smears made of brain tissue. If the dye test is negative it can be concluded that the mouse was uninfected. If the dye test is positive, pseudocysts may often be found in the brain tissue. These average about 50 microns in diameter and

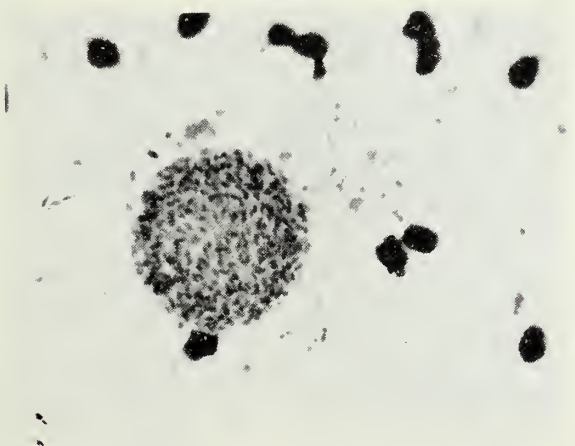


FIG. 3. Giemsa-stained smear of brain tissue of mouse with a persistent *Toxoplasma gondii* infection. Note the large pseudocyst packed with organisms. Magnification about 1600 X.

are nearly always spherical. Their appearance in a Giemsa-stained smear is illustrated in figure 3. If more than one mouse survives the 6 to 8 week period, the above procedure should be followed with all survivors, as we have seen instances in which the inoculum apparently contained so few organisms that only a part of a group of mice became infected.

In all cases in which parasites are found in laboratory animals, it is desirable that the strain be continued through at least a few animal passages. If this be done, the characteristic pathologic picture may be observed. This is particularly important if one is unfamiliar with the parasite, as a risk of erroneous identification exists if diagnosis is made simply upon a morphological basis.

The remarks above on the isolation of parasites are based on current studies by our laboratory in which we are comparing the results of different methods for recovery. These will be published fully elsewhere.

In the case of acute toxoplasmosis, either of the lymphadenopathic form or of the exanthematous form, the animal procedures to be followed are the same as in the congenital form but the choice of tissues may be somewhat different. During life, blood may be used with good prospect of success in severe infections. In the lymphadenopathic form excision of lymph node tissue has been established as a good procedure. Material taken may be in part studied histologically and in part put into animals. In this connection, let it be noted that histologic examination most often reveals no parasites even though subinoculation shows that small numbers at least are present.

In involvement of the central nervous system in acute toxoplasmosis, spinal fluid as well as blood may be used as tissues for inoculation. Likewise, skeletal muscle has been used in at least one instance with success.

Should death of the patient ensue, mice should be inoculated with a variety of tissues as in congenital cases. Brain should always be used, as should heart muscle, liver, spleen, lung, and lymph nodes.

In the case of ocular toxoplasmosis, it is

usually impossible to learn much from animal inoculation studies. Blood inoculations from this form of the disease have not been proved successful probably due to the fact that the parasites are localized in the eye. Eye tissue is usually not available, but if excision is practiced because of pain or other cause, material should be injected into animals. In at least one case such a procedure has resulted in definitive diagnosis of this form of the disease, which is usually only presumptively diagnosed.⁵

Use of Tests in the Diagnosis of a Typical Case of Toxoplasmosis

Early in 1956 we had the opportunity to study a case of congenital toxoplasmosis with the Pediatrics Division of John Gaston Hospital and the Department of Microbiology and Pathology of the University of Tennessee. In the following paragraphs we shall outline the laboratory procedures applied and the results of their use, with the hope that these practical illustrations may clarify and crystallize the discussion presented so far.

The patient was a colored female infant born at term, showing jaundice, hydrocephalus, and marked asymmetry of the head at birth. X-ray film of the head revealed cerebral calcifications leading the radiologist to suspect toxoplasmosis. Chorioretinitis was observed later. (This case has been briefly described by Deutsch and Horsley.⁵ Epidemiologic features of the case are in the process of publication.⁶)

Blood was sent to our laboratory for serologic testing on the 5th day of life and on the 9th day we advised that the dye test was positive at a high titer. On the following day we obtained blood and spinal fluid from the patient for mouse inoculation, and blood from the father, mother and two siblings for serologic study. The results of the dye test in dilutions were as follows:

Child (patient)	—1:16,000
Mother	—1:16,000
Father	—negative
Sibling	—1:4,000
Sibling	—1:4,000

The findings being in harmony with a diagnosis of congenital toxoplasmosis, and since the clinical findings were fairly typical the case was so treated. The results also suggested a common-source infection of the mother and two siblings.

On the 11th day we obtained ventricular fluid for mouse inoculation. On the 20th day one of the mice inoculated with blood was sacrificed; parasites were found in smears of the viscera. Also on the 20th day the child expired and

autopsy was carried out about 10 hours post-mortem.

At autopsy, tissues were taken from the brain, liver, spleen and heart muscle. They were suspended in physiologic saline solution, and injected intraperitoneally into white mice. The mice injected with the brain material died in 11 to 20 days and smears of the viscera, examined fresh and stained, showed numerous *Toxoplasma* organisms. One mouse inoculated with heart muscle was found positive when sacrificed on the 8th day after inoculation, but the mice injected with liver and spleen failed to yield *Toxoplasma* through several passages.

Thus the presumptive clinical diagnosis of toxoplasmosis was confirmed serologically and proved unequivocally by the isolation of parasites from several tissues. It should be added that, although the histologic picture was typical of advanced toxoplasmosis, parasites were scarce and could not be identified with certainty by us in the sections.

Summary

An outline of the principal immunologic procedures applicable to the study of toxoplasmosis has been presented with particular emphasis on the dye test. The availability, interpretation, and limitations of these tests were discussed. An outline was also given in detail of procedures which may be used to isolate parasites by the inoculation of laboratory animals with tissues of the patient in life or at autopsy. Finally, the application of these measures to the diagnosis of a typical case is described in order to relate the laboratory procedures to the problems of the clinician and pathologist.

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*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Committee Seeks Doctors Comments on Public Health

● Dr. Bland W. Cannon, Chairman of the Liaison Committee to the Public Health Department, states that the Committee is anxious to have comments from physicians relative to public health. The function of the liaison committee depends upon doctors bringing complaints or comments before the committee relative to the operation of the Public Health program in the state. The committee solicits your observations, comments or complaints. Write them to the Chairman, Dr. Bland W. Cannon, 1092 Madison Avenue, Memphis, Tennessee.

Prepaid Insurance Committee Holds Important Meeting

● Perhaps one of the most complex, yet important problems facing the Tennessee State Medical Association is the revision and agreement upon the Tennessee Plan. The Prepaid Insurance Committee met in Nashville on September 22nd, and for some five hours discussed, debated and worked diligently to come up with an answer on this vexing problem. It was the committee's final opinion that the plan should be continued for the same purposes for which it was inaugurated, that being an insurance plan primarily for the low-income group of people.

Committee Votes to Continue Schedule But Lower Income Limits

● The committee unanimously agreed to recommend to the House of Delegates that the Tennessee Plan be continued on the present schedule, with the exception that it be widely expanded to cover additional and new procedures. The major change in the plan would be to lower the family income limits from \$4200 per year to \$3600 per year, in order for patients to be eligible for service benefits. The \$2400 per year income for single individuals would remain at the present level.

Other Limitations

● In addition, the committee voted to (1) eliminate any patients from service benefits who had multiple coverage, i.e. (more than one insurance policy). (2) Also, a place on the form is to be made available for the policyholder to indicate his total family income and require him to sign such a statement. (3) The committee also recommended that doctors be allowed to nullify the service agreement if patients voluntarily select hospital accommodations more expensive than semi-private rooms and if the patient receives third party injury benefits as the result of a court order and out-of-court settlement. The fee schedule would continue to be a \$200 maximum with an effort being made to correct some of the inadequate fees.

In-Hospital Medical Service and Radio- logical Riders to Be Added to Plan

● Two riders will be recommended by the committee, one being an in-hospital medical care supplement for a hospitalized non-surgical patient. The other rider will include a schedule of fees to be paid for the radiological treatment of malignant diseases specified in the schedule.

To Be Presented to House of Delegates At a Called Meeting

● It is contemplated to forward all information concerning the revised Tennessee Plan to the officers of all county medical societies as well as the delegates from each society

and give the respective societies ample time to study the contents before a called meeting of the House of Delegates for final approval of the plan. The Prepaid Insurance Committee has been diligently working for more than a year on the plan trying to arrive at the most feasible schedule and at the same time protect the public and the doctors in these inflationary times.

Medicare Payments In Tennessee Near Half Million

● Since December 7, 1956, 6,152 Medicare cases have been processed for the doctors of this state and they have been paid the staggering amount of \$462,958.00 in the nine months' period. The above figures accrued through September 10, 1957.

Strong Socialized Medicine Effort to Be Made Early in 1958

● Every county, state and national medical organization should start now to organize an effort against the strongest socialization effort since the Wagner-Murray-Dingell bill in the early days of 1950. In the second session of the 85th Congress that will take up early in January, 1958, a proposed social security amendment to provide physician and hospital services for social security beneficiaries will be made. Introduced just before the adjournment in early September, the bill was carried over to the January session. Next to the last step in socializing American medicine, the bill would provide hospital, surgical and nursing care for retired workers and any of their beneficiaries and survivors. Representative A. J. Forand of Rhode Island, a Democrat, estimates that up to thirteen million Americans would be "covered" in the first year, if his bill goes into effect.

What Is Proposed

● The proposed revision would do three things: (1) Furnish hospital care up to sixty days per year along with nursing home care up to a combined total of 120 days along with surgical service. (2) Increase compulsory social security tax base from the present \$4,200 to \$6,000 per year and the rate on employer and employee by 1/2 per cent and progressively upward to 9 1/2 per cent combined total by 1975. (3) Raise present social security payments to retired persons and survivors by as much as 50%, i.e., maximum monthly benefit \$305 instead of the present \$200.

HR 9467

● The bill, HR 9467 has been endorsed by the AFL-CIO and is a long step toward further socialized medicine. Provisions call for government determining payments to doctors while contracts would be negotiated with hospitals. It is anticipated that the program would be administered by state fiscal agents (like Medicare)—where satisfactory arrangements can be made. This would apparently rule out un-cooperative medical associations. HR 9467 is a bill that organized medicine will hear much more about in the early months of 1958.

TSMA Postgraduate Program

● The Symposium Postgraduate Education Committee will conduct three meetings in East Tennessee on October 29-30-31.

"The Acute Heart—Management of Acute Heart Diseases and Coincidental Surgery on the Acute Cardiac Patient" will be discussed in Kingsport on October 29th, Knoxville on October 30th and Athens on October 31st.

County Medical Society Officers Conference Program Nearing Completion

● The program for the State and County Medical Society Officers Conference to be held in Nashville on February 23, 1958, is practically completed. The entire program will be announced in the November issue of the JOURNAL. Please mark this date on your calendar if you are a county society officer or a member of any of the state or county committees, as this will be worth your while and interest to attend this meeting. Complete details and more information will follow.

Public Service

THE TENNESSEE TEN

Robertson County Organizes Health Council

● Robertson County has become the first to organize a health council under the program approved by TSMA's Rural Health Committee. Mrs. Elizabeth Tandy, Assistant Administrator of Jesse Holman Jones Hospital, was elected chairman. Dr. John M. Jackson, member of the Rural Health Committee from Robertson County, is a member of the council. The council's first project was to institute a survey of health conditions in Robertson County. Results of this survey will provide a springboard from which to launch both immediate and long-range programs.

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Dr. W. E. Boyce Honored with Program At Hohenwald

● Thousands of residents of Lewis, Wayne, Hickman, Maury, Perry, and Lawrence Counties gathered in Hohenwald September 14th to pay tribute to Dr. W. E. Boyce, a physician who began his practice of medicine "45 years and 5,500 babies ago." The testimonial program was arranged by the members of the Lewis County Civic Club. Dr. Boyce, who was graduated from the University of Tennessee College of Medicine in 1912, plans to retire next year.

"Doctor Brandon Day" Planned At Martin

● Meanwhile, Weakley County residents are planning a ceremony to honor Dr. R. W. Brandon, Sr., who this year observes his 50th year in practice. Governor Frank G. Clement will be one of the featured speakers on the program in Martin, November 10.

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Medical Assistants PR Course "Success"

● The Public Relations and Office Procedure Course for Medical Assistants, completed this month in Nashville is regarded as highly successful by the more than 200 medical assistants who enrolled. Two-hour meetings were held each Tuesday night, beginning September 10, and winding up with a banquet meeting October 1. Dr. W. O. Vaughan, President, Nashville Academy of Medicine, presented certificates to the 183 medical assistants who successfully completed the course. The course was jointly sponsored by the Nashville Academy, the TSMA Public Service Office, and the Nashville Medical Assistants Society.

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State Education Department Endorses Health Project Contest

● The annual TSMA Health Project Contest, sponsored by TSMA, has again received the endorsement and cooperation of the Tennessee Department of Education. R. R. Vance, Director of Instructional Administration, has written the principals of all Tennessee senior high schools, urging them to actively support the contest and to encourage participation by classes within their schools.

"It is my belief that the contest will inculcate in your students an increased interest in health education and will thereby strengthen your health education program," Vance said in his letter to the principals.

Of the more than 60 contests conducted in Tennessee schools each year, only four, including the Health Project

Contest, are officially endorsed by the Tennessee Department of Education.

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**Medical Societies
Conduct Health
Exhibits at Fairs**

● Several county medical societies conducted successful health education exhibits at county fairs during the season just passed. The exhibit of the Knoxville Academy of Medicine, at the Tennessee Valley Agricultural and Industrial Fair, attracted tens of thousands of interested spectators. Carrying out the theme of Academy's centennial, the exhibit contrasted surgical techniques of then and now, using store mannequins, circa 1857, under unsterile conditions which prevailed at that time. Adjacent to this scene was a complete surgical setup, with a "patient" undergoing heart surgery, with mannequins in sterile gowns representing the patient, surgeon, scrub nurse, and anesthesiast.

Robertson County fair-goers saw an elaborate exhibit, featuring a store mannequin, which demonstrated the need and uses of blood and blood fractions. The Nashville Academy featured an interesting exhibit which graphically explained the digestive processes, and the Shelby County Society's exhibit on the birth process drew wide-spread attention.

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**Press Award Contest
Rules Changed,
Clarified**

● The Press Award Contest Board has approved two changes in the rules of the contest. One changes the wording and assures the eligibility in succeeding contests of those contestants who have previously won. The other sets the date for awarding the \$300 prize in February instead of January. Plans tentatively call for the prize to be awarded at the County Officers Conference in Nashville, February 23.

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**Work to Begin
On State Press Code**

● Initial drafting of a statewide press, radio and TV code, or guide for cooperation, is expected to be well underway by the end of October. The committee is now complete with the appointment of Ed Freeman, City Editor, The Nashville Tennessean, to represent the Tennessee Press Association. Other organizations represented on the committee are the Tennessee Hospital Association, Tennessee Broadcasters Association, and the TSMA Public Service Office.

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**Asian Flu Vaccine
Supply Improves**

● Reports reaching the Public Service Office indicate that Asian Flu vaccine will become more plentiful by November 1st. Figures on specific quantities which will be made available to Tennessee physicians are, however, not obtainable. Three manufacturers have begun distribution already of the vaccine; a fourth will begin to distribute it throughout the state October 15.

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**New AMA Film
To Be Released**

● A new film, "Even for One," will be released by AMA for showing to clubs after January 1. The film is currently available for TV and medical societies. It dramatizes the importance of a doctor's judgment in medical care.

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7. Jacobs, L., and Lunde, M. N.: Hemagglutination Test for Toxoplasmosis, Science 125:1035, 1957.

8. Deutsch, A. R., and Horsley, M. E.: Congenital Toxoplasmosis, Am. J. Ophth. 43:444, 1957.

9. Gibson, C. L., and Eyles, D. E.: Toxoplasma Infections in Animals Associated with a Case of Human Congenital Toxoplasmosis. (In preparation for publication.)

Rapid Estimation of Blood Glucose Concentration with Ordinary Tes-Tape. Holbrooke S. Seltzer, J.A.M.A. 162:1234, 1956.

The author reports a simple technic, based on the color response of ordinary Tes-Tape to plasma, which enables rapid gross estimation of blood glucose concentration. Both mild and severe hypoglycemia can be instantly distinguished from normal blood sugar values by observing the Tes-Tape reaction to undiluted plasma. More precise information is obtained by determining the color reaction to serial dilutions of plasma. The procedure offers a range of accuracy that is proportional to the actual level of glucose in the blood. The glucose concentrations that are below 50 mg. can usually be read within 20 to 30 mg. while at very high levels the reading range widens to 200 to 250 mg. The simplicity and rapidity of the test and the availability of materials recommend the test for general use whenever prompt information concerning approximate blood sugar levels is desired. (Reviewed for the Tennessee Diabetes Association by Charles A. Rosenberg, Memphis, Tenn.)

STAFF CONFERENCE

Vanderbilt Medical School*

Rehabilitation in Epilepsy

DR. WILLIAM ORR: This meeting today is a little unusual in that the patient, by definition, has neurologic disease, and is presented at a psychiatric conference for members of the State Department of Vocational Rehabilitation in order that we may discuss some rehabilitation aspects of a problem of this kind.

The social worker, Mrs. Montgomery, will give the social background of this patient with epilepsy.

MRS. VIRGINIA MONTGOMERY: This history information was secured July 8, 1957, from the patient's paternal cousin-in-law (Mrs. E. B.) who has known the patient "all her life." Informant is 32 years old, has two children, works as a waitress in a local restaurant, very friendly, pretty, seems genuinely fond of the patient, and believes her seizures are due to patient being "upset about something." The cousin is cordial in urging the patient to live with her and family, and believes she can help her by giving her encouragement.

The patient, aged 30, is the older of two girls (a sister 10 years younger), born and reared in Hohenwald, Tennessee, until age 14. Birth and infancy details are unknown except that her mother has been sick and "had nervous spells" ever since patient was born. Mother is high strung, complaining, ambitious for material comforts, and married the patient's father "on rebound." The father is easy going, quiet, hard-working, and always made "good living" as a barber. Patient preferred her father to mother who always seemed ashamed of her.

Patient apparently was a healthy, active child, enjoyed other children, and loved animals. She was always shy with boys. Parents are members of the Church of Christ and restricted patient and sister's social activities feeling that church-going was sufficient.

When she was 14, her family moved to Detroit. It upset her greatly to move away from relatives and friends. The patient and her father did not want to leave Tennessee, but mother insisted on moving north to make more money. Patient made periodic visits to Tennessee to see relatives who were fond of her. (Cousin, Mrs. E. B., recalls Hohenwald relatives saying that patient had a "nervous breakdown" as a child, but no details known as to age or symptoms.)

*From the Department of Psychiatry, Vanderbilt University School of Medicine, and Vanderbilt University Hospital, Nashville, Tenn.

The cousin believes the patient was "smart in school" and finished one semester in college and quit. She had had few dates in high school or college and said she felt awkward with boys. (She told her cousin the seizures began while attending college. The cousin believes the patient may have become upset about being intimate with a Cuban boy whom she dated but who lost interest in her.)

The cousin further states the patient has always kept her feelings to herself but has been able to confide in the cousin more than anyone. She always had trouble making friends. The cousin believes she "never had enough done for her to help her enjoy life and have fun." Sex education was uncertain but the cousin believes her mother was not the kind to discuss such matters. (The cousin seems to have a healthy attitude in this area and has tried to answer the patient's questions.)

The patient has had little work experience, feels inferior as she was not trained to do anything useful. She confided recently to her cousin that she feels her life has been a failure since she is not married and has no children.

DR. ORR: Mrs. Montgomery, from whom was this social history taken?

MRS. MONTGOMERY: The history was taken from the patient's paternal cousin-in-law, Mrs. E. B., a waitress.

DR. ORR: My reason for emphasizing this is to underline the excellent insight we get into the patient from a person so distantly connected with the family on paper, but a member of the family in fact, who felt and understood the tensions which went on within the family. It shows that often a social history from an improbable person gives you much real information.

Dr. Spalding, will you give the history you obtained from the patient?

DR. ROBERT SPALDING: This 30 year old white, unemployed, single woman was referred by a local rehabilitation counselor for admission with a chief complaint of, "I'm afraid of having seizures."

Present Illness. The patient has been subject to seizures for the past 10 years and estimates that she has had altogether about a thousand. Although her seizures are "indescribable," she relates the following facts: about half are preceded by a premonition, a mental picture familiar and not unpleasant but at the same time terrifying to her; there is a minute's loss of consciousness during which she stares, mutters, and slumps in her seat or to the floor. Following the seizures she is dazed for several minutes and is sleepy afterward but has no memory of events during it; although occurring irregularly they average two or three times weekly and for the past couple of months as often as two or three times daily.

She has been on 0.4 Gm. of Dilantin and 0.3 Gm. of Mesantoin and Meprobamate for the past four months. An electroencephalogram taken in 1950 was suggestive of a left temporal lobe focus.

On the days the patient has seizures she is in constant fear of having another one, and even on seizure-free days she lives in dread of them. She feels constant tension, irritability, and is prone to transitory depressive moods with occasional spontaneous crying episodes. Her greatest difficulty lies in relating to people her own age, particularly men. She feels unable to make social contacts because of this anxiety and her feelings of inadequacy as a person even when she worked as a secretary. She has not worked for six months.

The patient became addicted to barbiturates in 1951 and went to a state hospital in Michigan which she calls a "terrible experience." While institutionalized there for a year, she received intensive psychotherapy and on an OPD basis for three following years. After many disputes with her mother, she left Michigan, and for the past several months she has lived with her grandparents in Tennessee.

She has entertained the idea of suicide for over a year now, and states very firmly that she will go ahead with her plans if we cannot help her. Her only distortion of reality is that she occasionally feels both a participant and an observer in situations.

Personal History. The patient is seven years younger than her only sister whom she describes as a "somewhat extroverted, lovable, sincere girl" whom she claims to love very much. Her father was a barber who is a "cold, shy, withdrawing, unaffectionate, quiet man" to whom she has never felt very close. Her mother is very different in personality and becomes emotional very easily. She has episodes of "hysteria" and "temper tantrums." The patient feels that although her mother is a warm and affectionate woman there is a barrier between them and she has never been able to confide in her. She considers the mother is the head of the family and did what little disciplining was done. The patient has always been known as a "good, sweet child" who never needed disciplining. She completed two years in a church college where she had the reputation of a good student and a "book worm." Although the patient was elected to many offices and was editor of her school paper, she never had the feeling of being accepted at school, and because of this seldom dated. For financial reasons she left school and worked sporadically at different clerical jobs. She has been troubled by sexual fantasies and preoccupations, and the sexual content of her dreams has caused guilt feelings. She has had no sexual relations and little knowledge of sexual matters, but masturbated frequently in childhood and in her early twenties with fear and guilt. At present if she stays in the bathroom or in her room too long she feels that people are suspicious of what she is doing. After dating a boy a few times she will refuse to go out with

him again because she is afraid that he will try to "kiss and pet her." Even in reading magazines she skips the stories relating to men and women in intimate relationship.

Patient belongs to the Church of Christ, but she has little real interest in religious matters. Although her feelings of inadequacy and fear of rejection cause her to withdraw, she creates the impression of not caring and states that people would be surprised to know her true feelings.

Mental Status. The patient is a neat, clean, not unattractive, plainly dressed woman who appears younger than her stated age. She gives the impression of warmth and sincerity. The form and content of her speech is occasionally interrupted by the patient's hanging her head and thinking out loud a few seconds before she resumes her speech. Her look is straightforward, and she is frank in speech. Her mood is appropriate but serious, and her wit is dry. Her intellectual resources are most adequate. She has considerable insight into the psychodynamics of her illness.

Physical examination. There was no significant abnormality. There were no unusual skin lesions, and her blood pressure was not elevated. Neurologic examination both by resident staff and the neurologic consultant, Dr. Bertram Sproffkin, was not deviant. There were no lateralizing motor or reflex phenomena, her cranial nerves were intact, and she showed no evidence of aphasia.

Laboratory examinations showed blood and urine cytology and chemistry within normal limits.

DR. ORR: Dr. Kirk, what did psychologic testing show?

DR. VIRGINIA KIRK: Psychologic examination: July 3, 1957. The Behn-Rorschach test was done. Miss B. responded rapidly, giving 24 responses in 9 minutes. Her intellectual control shows marked variability, with forms clearly perceived during the first half of the test but with perception becoming more and more inaccurate and confused as emotional stimuli increased. She had what appeared to be a brief lapse of consciousness during her response to Card VI. She was quite concrete in her approach to problems and popular rather than original in her interpretations at first, but in the last half of the test, her confusion was reflected in poorly organized, abstract interpretations. The content of responses suggests that obsessive thinking concerning sexual functions distorts the accuracy of her perception. The patient seems to be able to maintain her ego control through the use of some conversion mechanisms. She loses her control momentarily, then recovers. Some of her seizures may represent conversion symptoms superimposed upon psychomotor attacks. The impression from the Behn-Rorschach test is that the patient may be in an early phase of a schizophrenic reaction. She does not seem to be able to maintain her ego control although she shows recoverability.

On the Bender Visual Motor Gestalt test, the

patient had some difficulty with the drawings of the last two figures, but this was not severe enough to suggest the presence of organic brain damage.

Drawings of house, tree, and person reflected the patient's schizoid personality structure together with signs of difficulty with body imagery and spatial orientation. She noticed that the drawing of the human figure slanted in a way similar to the feeling which she had that the walls of her room slanted around her. This may be a temporary symptom which will disappear when anti-convulsant drugs are regulated.

DR. ORR: Thank you, Dr. Kirk.

Miss Cornelius, will you summarize the observations made by the nursing staff?

MISS DOLORES CORNELIUS: Miss B. came on the ward on the afternoon of July 2. She arrived with Mr. Combest of the Tennessee Vocational Rehabilitation Service. She was dressed in red treader pants. Her hair was unkempt. Her gait was staggering. As the nurse showed her the bathroom, she said she was so "groggy from all the dope" that she could not read the numbers of the doors. She had difficulty finding her way around the division. She seemed unhappy as she talked of her seizures and their increase in frequency the past week. She said the division was "very nice," then said, "To tell you the truth I don't like it at all." She met only a few patients the first day as she felt groggy, but was pleasant to the staff and the few patients she met.

Miss B.'s only contact with her family was a first cousin and his wife. She seems to have an excellent and warm relationship with the wife, Mrs. E. B. They visited her frequently, and as Miss B. improved, she visited in their home.

Her relationships with the staff were warm from the beginning of treatment. She was dependent on certain nurses, and during seizures seemed to seek bodily contact. At times she clung verbally to nurses by telling them how much she liked them. As Miss B.'s relationships with other patients improved, she was less dependent on the staff.

Miss B. has shown good progress in relating to the other patients. At first she expressed concern over being with other patients because she might hurt them or her seizures might upset them. The other patients expressed anxiety about the seizures and at first did not include Miss B. in group activity. After a few days of observing the nurses' reaction to situations and talking with staff they included Miss B. in activity.

Miss B. began improvement in interpersonal relationships by first relating with the other women patients, her roommate in particular. In the beginning she showed reluctance to have social contacts with male patients and staff, but some improvement in this area is now noted.

Accompanying Miss B.'s change in attitude toward other people corresponding improvement has been noted in her personal appearance and the tidiness of her room. She now dresses attrac-

tively in dresses of more feminine design and is always well groomed.

In talking of the college she attended Miss B. said she did not mind the strict rules as she had always complied with rules. Her behavior at first was passive acceptance of limitations of routines, later she was able to express some resentment of the limitations.

Miss B. enjoyed the work in the kitchen and expressed a desire to learn to cook, so food preparation was used as a psychotherapeutic nursing measure. She ate with a good appetite at family dinner, but her weight remained 110-112, which is slightly underweight for her five feet seven inches.

Miss B. was given outside privileges soon after admission. She was hesitant about leaving the division, but with the staff's support she was able to be going out alone during her second week of hospitalization.

Some weak desire was expressed by Miss B. to work as a receptionist, but she felt she could never do this because of her seizures.

Other than one headache on the day of staff conference, Miss B.'s only other somatic complaint was one episode of slight dysmenorrhea.

DR. ORR: Is the patient ready to come in? (Miss B. comes in.)

(As the interview was moderately lengthy, it will be summarized except for especially interesting or pertinent replies.)

She said at the onset that she was really not feeling any better since admission, but had been a little more comfortable in the past three days as she had had fewer seizures. She usually had a warning that she was going to have a seizure but said, "I can't do anything about it" (to stop the seizure) "when it comes." She proceeded to say that though the warning "idea" was not unpleasant, the warning was "terrible." She always felt worse and never better after seizures. She then contradicted herself as follows:

DR. ORR: Is there anything that you can do to stop or control your seizures?

MISS B.: I try to practice thinking. I try to change my thoughts.

DR. ORR: When you have a long warning period, do you find anything to do which will help you ward off an attack?

MISS B.: I get that 'so what' attitude. I relax as well as I can because there is a knot in my stomach.

DR. ORR: Has this worked?

MISS B.: Yes, several times. They would not come after I had a scary warning.

Later she was asked again:

DR. ORR: Comparing the way you feel now with the way you felt at first, how would you say you were getting along?

MISS B.: There is no difference, none, honestly.

DR. ORR: We want to know.

MISS B.: None except the times I tried to ward them off.

DR. ORR: No difference, then?

MISS B.: Well, I have been encouraged by Dr. Sprofskin, encouraged about seeing him. I saw him yesterday and he added phenobarbital to the Dilantin.

Further the interview progressed.

DR. ORR: Do you know any thoughts that seem to be precipitating factors?

MISS B.: Yes, there are several things.

DR. ORR: Any particular thoughts?

MISS B.: Things that come to mind, things that just come to my mind.

DR. ORR: Can you classify these things in groups?

MISS B.: No, I never tried to.

Dr. Orr then asked her further as to the kinds of ideas that come to her before the attacks and asked if she could at her leisure classify these types of thoughts to which she replied it had never been suggested to her that she do this but she would try.

She denies having seizures during therapeutic sessions, save once in Michigan (although this had been observed here both in psychiatric and psychological sessions.)

The interview terminated on a discussion of where she would live on discharge and what sort of work she would like to do. About this she was vague.

MISS B.: It would have to be something out of sight, in the back of the place where no one would see me,—I've been so fearful for ten years.

On leaving she turned to Mr. Combett (rehabilitation worker) to ask when he would see her.

MR. JAKE COMBEST: I would like to say that I am greatly impressed with her improvement. She is so much more composed. In fact, she is a very different person than she was when I had the initial interview. How far she can go and will go is another question, but I am pleased with what I see at this time.

DR. KIRK: I have not seen her since I examined her three weeks ago. She shows

very much more composure at this interview than she did before. She shows none of the confusion in her thinking.

I thought she talked fairly clearly here and was able to be quite straightforward with you. She was very confused before and could not have answered many of your questions.

MISS CORNELIUS: I would like to re-emphasize from my nursing summary how much Miss B. has improved in interpersonal relationships specifically with the male patients.

DR. ORR: It is interesting that Miss B. does not feel that she has shown any improvement and yet everyone else recognizes the change which has occurred in the character and the ease with which she relates to other people. I wonder what the meaning of this is. The first thing that occurs to me is that she is anxious not to leave the hospital and that this is a means of saying, "I'm really not any better, you can't let me go now." Certainly, I felt that she was able to describe her feelings as clearly and as precisely as any patient I have seen in a conference of this sort. Her ability to recognize that there are ideas and thoughts which occur to her just prior to the seizures (which the seizures blot out and prevent her from recalling) is most interesting. The fact that she was interested in classifying these in categories is significant as it is evidence that she is capable of self-observation so necessary to a person with a problem as deeply seated as hers.

MISS CORNELIUS: How do you feel about her reaction to her interview with Dr. Sprofskin?

DR. ORR: Well, Miss Cornelius, I think we ought to hear what Dr. Sprofskin's verbal report was to the house staff before we discuss that. He talked to you about that did he not, Dr. Spalding?

DR. SPALDING: Dr. Sprofskin was very pessimistic concerning her prognosis and thought that this patient would probably wind up as a chronic institutional patient.

DR. NATHANIEL WINSTON: Well, I think in response to Miss Cornelius's question that she had been prepared for Dr. Sprofskin by having seen another neurologist in his absence who said that on Dr. Sprofskin's return he would have some med-

icine or some new idea which would make her well, and this was built up in her mind even though we attempted not to allow her to be carried away by this. It is what she anticipated on seeing Dr. Sprofskin.

DR. ORR: Dr. Sprofskin's and my ideas about epilepsy are polar. Dr. Sprofskin feels that epilepsy is primarily a physical illness, and he has no truck with a psychologic interpretation of it. His objective and forthright attitude, which I am sure the patient sensed, gave her a method of resisting psychotherapy, and her belief that another pill would cure her fits right in with her unconscious resistance at this time. I think that the addition of phenobarbital to her medication is not wise.

MR. COMBEST: My personal opinion is (and this is not the opinion of the division) that I cannot agree with Dr. Sprofskin because there has been such an improvement. There have been so many indicators saying that progress has been made from the time I first met her around the fifth of May. I will not dispute his opinion, as his prediction may be right, but I cannot accept it at this time.

DR. ORR: It is very unfortunate that Dr. Sprofskin is not here to defend himself because we are attacking him, and he has become the whipping boy, for it is Miss B. against Dr. Sprofskin.

DR. SPALDING: Perhaps my defense of Dr. Sprofskin is prejudiced as he was my teacher, but it is my understanding that phenobarbital and Dilantin are the best combination for psychomotor epilepsy.

DR. ORR: Well, there is a difference of opinion about that. My feeling is, no matter what, no barbiturates should be added to this woman in whom we have a previous history of addiction to barbiturates whether one or the other is the source. Let me discuss at this time what a psychomotor attack is because I think that this is important in this problem. When a petit mal seizure occurs there is a brief moment of unconsciousness. Following the unconsciousness there is a *gradual* return of the cortical function. During this period the person may show any number of different types of peculiar activities from simple drowsiness and confusion to activity which seems to be purposeful but which does not fit the im-

mediate needs of the situation. It is difficult to distinguish, therefore, the "psychomotor attack" which is accompanied by particular types of waves in a high percentage of cases from the confusion which follows the petit mal attack in that both of them show peculiar, directed, but inappropriate activity. The psychomotor attack, however, is characterized by amnesia for the events of the attack itself, that is, a large proportion of patients with psychomotor attacks have no recognition of the fact that they have an attack at the time it occurred. This girl is highly conscious of the fact that she has many but not all of her attacks. I must be fair. On the other hand attacks which start in the temporal lobe or have a temporal lobe focus are more frequently psychomotor than petit mal although this is not an absolute statement. I would rather believe that this girl has rather severe "deep" petit mal attacks followed by postictal confusion rather than these actual psychomotor attacks.

DR. WINSTON: Dr. Peper tells me that during one of his therapeutic sessions with Miss B. she had a seizure in which sort of "typical" psychomotor behavior was observed. In this attack she fell down to the floor and started reaching around as though she were trying to pick up something, then stood up and pointed her finger at Dr. Peper for a few seconds, the total seizure not lasting over thirty seconds. After this she was confused but did question him as to what she had done and apparently had some recognition of the fact that she had engaged in purposeless behavior.

DR. ORR: That sounds like postictal confusion to me. This is very interesting in that she specifically denied it in the interview here saying she had only had one attack in therapy and this was many years ago, so possibly there is more amnesia for her attacks than she is willing to admit at this time. I believe that either Dr. Sprofskin or I may be correct, depending on how things go here, for this is a very crucial time in this girl's life, and if things fall apart completely, she may well "give up" and become an institutional patient. I can see perfectly well how this condition can progress to the point where she is totally incapable of handling any of her social

duties, particularly when she has rejected her family and probably has been rejected by them. Only through this cousin does she have a method by which she can relate to her community and to the people around her. If we can offer her in some way a point of safety from which she can operate, by which I mean not only the hospital here but the Vocational Rehabilitation Service, or something safe around which she can orient herself to go forward, I believe it is possible to circumvent the institutionalization which is suggested as a possibility by Dr. Sprofskin. At this time I believe this girl is certainly well enough put together to be able to accept support in psychotherapy if a useful transference relationship is established. In the treatment of epilepsy the transference relationship, usually undiscussed and "unanalyzed," is the most useful tool. Many think the purpose of the seizure is to isolate her from her unacceptable fantasies. (Certainly we can see the aggressive nature of hers with her frequent questioning, "Did I hurt anyone?" at the time of the attack.) Therefore, if a transference relationship can be maintained at a level where the person feels safe, the therapist becomes able to assist the patient in redirecting these drives into useful activity. Job placement in this situation becomes a very, very crucial point. It is not so much the kind of work they do, but the kind of person and with whom they work that is most significant.

I'd like to ask Mr. Combest what he feels about rehabilitation such as this.

MR. COMBEST: Well, first I'd like to say that we have definitely established that she is vocationally handicapped, and the purpose of our program is to help those who are handicapped and, if possible, make them become independent. As I stated a while ago I am impressed with the progress that has been made, and I do not visualize the possibility of her falling apart at this time. It is our intention to work with the hospital and use what skill we possess in selecting a job situation in which she can function at least minimally. We recognize the many things associated with a job with a person of this type. With help from the psychiatrist

we hope that we can select a situation in which she will gain some independence.

DR. ORR: Mr. Combest, from observing her turn to you in the conference for support, she must feel a strong positive relationship for you and this, of course, is one of the strongest assets with which we can operate. I am not sure whether it is fortunate or unfortunate that Dr. Peper is not here with us today; he has been the "therapist" during her time in the hospital. If he were here we would talk of the dynamics of the situation far more extensively than we have, and this would lead to much discussion about the advisability of this or that kind of job for her in the relationship to her dynamic drives toward one sex or one age group or the other.

MR. COMBEST: In talking with the client I have noticed on many occasions that she openly resents accepting financial help from relatives, and I feel in regard to the other therapy that if given a job where she can become independent will be a certain degree of treatment in itself.

DR. ORR: I certainly agree with that. Let us summarize the situation. We have a 30 year old woman who has had attacks we know for the past twelve years and possibly even longer. She has had rather adequate psychotherapy in Michigan over a three year period so it seems unlikely that an analytical type of treatment would be advisable at this time.

She has certain very definite assets, she is intelligent, she is not an unattractive looking girl, she conducts herself well, and as we all know she is modest and self-observing, and is willing to observe herself even more. With these and with our interest in her I feel there is a good chance of rehabilitation for her. In addition, she has a place to go, where she is wanted and where she feels wanted, namely her cousin and cousin's wife, who apparently are genuinely fond of her, visited her at the hospital, and seemed pleased to have her come and stay with them. With this setup I believe we have a favorable climate in which to work, and it would be very interesting to have another conference this time next year to observe what has occurred.

President's Letter



J. PAUL BAIRD

Upon this page in September and at a recent meeting with Chattanooga and Hamilton County Medical Society, I urged that timely action be taken on our Tennessee Plan of Prepaid Insurance when a special ses-

sion of the House of Delegates meets.

Since then I attended with a great deal of interest the meeting of the Prepaid Insurance Committee, September 22, 1957. This Committee has a well balanced representation of men from different sections of the state and their opinions reveal very well the diversified feelings, and sectional differences of reaction to our existing plan of Prepaid Insurance, and to future consideration and modifications of the plan.

There are certain conclusions which this Committee has reached. After much deliberation and experience with this insurance problem, their forthcoming recommendations should deservedly influence our action and vote. These recommendations will be distributed from the Central Office to all Societies in the form of letters to County Society Officers concurrently with the publication of this page.

With this information at hand there should be adequate time for free discussion to arrive at majority opinion in the Component Societies so that delegates may be instructed as to your wishes in a forthcoming special meeting of the House of Delegates, to be held solely for action upon this problem.

In the discussion, I believe there should be considerable thought given to some of the major provisions which will be contained in the Committee recommendations.

(1) It was the unanimous opinion of members of this Committee that some type or plan of low income prepaid insurance should be kept in effect. The feeling was expressed that the need for combating the idea of national compulsory health legislation is just as urgent today as it was when this plan was originally adopted. For this

reason the Committee recommended that a low income level for each family should be set arbitrarily at \$3600 per annum.

(2) This Committee was practically unanimous in its consideration that, due to the expressed feelings of reaction against having a third body interpose a fee schedule in the income level arbitrarily set above \$3600 per annum, it would not recommend the adoption of a so-called plan B, which would allow family income to be raised to \$5000 per annum.

(3) The Committee had previously agreed upon recommending that people holding multiple insurance policies would not be eligible for service benefits within the limits of the schedule. This most contentious feature will therefore be eliminated and should interest a greater participation on the part of physicians. The individual holding multiple coverage can, of course, recover whatever benefits, or payments due him, but the physician who participates in the plan will not be obligated to limit himself to the basic fee schedule.

These major points, plus the adoption of a recommendation to have a signed statement of income, optional medical benefits, and radiologic treatment, should make this plan a workable and acceptable plan for wider participation.

Aside from these considerations of basic recommendations as to how your delegates should vote on it or any other plan, it is my personal conviction that we should not try to provide for too elaborate provisions in low income policy or it may be questionable whether this group can afford the plan. I am also convinced that members of the Committee and individual physicians have had enough talk from the insurance carriers telling us what we should not and cannot do. If we agree to participate under such a plan let us tell the insurance carriers to put these features in their contract, figure their premiums and sell it or get out of the saddle. My hide is rubbed raw anyhow.

Paul Baird

NOTICE

IMPORTANT

**FOR RESERVATIONS AT THE ANNUAL MEETING
OF TSMA
GATLINBURG, TENNESSEE
APRIL 20-23, 1958**

WRITE OR CONTACT:

**Housing Bureau
Tennessee State Medical Association
P. O. Box 208
Gatlinburg, Tennessee**

A \$10.00 deposit is required at time of making reservation in order to receive immediate confirmation.

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ATTENTION

TENNESSEE STATE AND COUNTY MEDICAL SOCIETY OFFICERS CONFERENCE

Presidents—Secretaries—Councilors—Committee Chairmen—Public Relations—

Legislative—Delegates—Trustees and Related Medical Leaders

The second TSMA State and County Medical Society Officers Conference will be held at the Andrew Jackson Hotel, in Nashville on Sunday, February 23, 1958

Watch your mail for further announcements, and make plans to attend.

Program Speakers Include—

Mr. Charles B. Shuman, Chicago, President, American Farm Bureau Federation, who will speak on an important Economics subject.

Mr. Leo Brown, Chicago, Public Relations Director of the AMA.

Dr. Percy E. Hopkins, Chicago, Chairman of the AMA Committee on Prepaid Health Insurance Plans.

Dr. Thomas H. Alphen, Washington, Director of the AMA Washington Office. Subject: "The Doctors Stake in Legislation in an Election Year."

Col. Earl Lowry, Washington, Deputy Director of the Medicare Program.

Mr. Loye Miller, Knoxville, Editor, Knoxville News Sentinel. Subject: "Teamwork Between the County Medical Society and the Press."

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OCTOBER, 1957

EDITORIAL

VIRUS INFECTIONS

The tremendous strides taken in the identification and treatment of infectious diseases are among the most important contributions to medicine during the past generation. Virus infections and research on viruses have increased in such a spectacular fashion during the last ten years that virology has become a major division of microbiology with its own journal, symposia and professorships. In addition, research work with viruses has made important contributions to related fields, such as immunology, genetics and cellular physiology.

It is important to distinguish between the smaller viruses such as those of poliomyelitis and influenza, and the larger viruses as of the lymphogranuloma-psittacosis group. The latter viruses are not only structurally

complex but demonstrate metabolic activities not found in smaller viruses.¹ The number of known viruses has increased and our knowledge has increased also. Although interest has been centered on vaccines against two of the smaller viruses, poliomyelitis and influenza, during recent years, the pediatrician, general practitioner and internist have been aware of viral diseases ever since Pasteur discovered the rabies virus in the blood, in 1884, and Buist found elementary bodies in smallpox in 1887.

With such an auspicious start it would be natural to suppose that the term "virus infection" would include a specific and well demarcated group of diseases. Such is not the case. Most infectious illnesses of unknown etiology are attributed to a viral infection either by the physician, the patient or both. Somehow the term "bacterial infection" does not have the same magic implication, and yet this term is just as non-specific as "viral infection."

Is it necessary to have a term which can be freely used to hide our ignorance? Are physicians afraid to say: "I don't know," when asked about the etiology of an infectious disease? Most patients pursue a rather exacting medical course by following the medical literature comprising *House and Garden*, *Readers Digest*, *The Saturday Evening Post* and other journals which provide the latest in medical progress and thinking. Do patients after such studying demand a name for each and every disease? Who knows which prize patient will leave for more certain climates where physicians can find a name, even if the name is a nonspecific wastebasket called "virus infection"? At some time patients must be told that medicine has many etiologic frontiers not yet visited. If they are not told medicine's limitations, campaigns for research funds will dry up.

Intellectual honesty must not get lost in the shuffle of saying "virus infection," instead of "I don't know." Although this plea for discarding the term "virus infection," except in cases of proven viral etiology, may not change many office and home consultations, it should encourage physicians to remember they are human, frail, and occasionally ignorant when it comes to put-

¹Adams, Mark H.: The Nature of Viruses, *Bull. New York Acad. Med.* 33:397, 1957.

ting an etiologic identification bracelet on every disease that comes their way. If physicians remember and accept this, great strides in medical research will continue to be made.

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A. B. S.

THE DRUGGIST AND THE DOCTOR

The Special Item in this issue offers a number of points worthy of comment. In recent years there has been a growing tendency for the medical profession, through its national, state, and county organizations, to meet with, and to discuss with other professional or lay groups problems of mutual interest, and especially misunderstandings if such exist. Thus, there have developed the joint meetings, at several points in the State, with the legal profession for the discussion of medicolegal problems. Codes have been established between the medical profession and those who disseminate the news, whether by newspaper or radio. There has been a committee of the State Association which has met with a committee of morticians. Now, Dr. Cannon suggests that much might be gained by the discussion of problems common to doctors and pharmacists, as well as to do something about certain areas of misunderstanding between these professions. Any gain here would be for the good of the public; and surely benefit to the patient, in whatever form, is still the main objective of the doctor.

In 1955, the total cost of medical care in the United States was 11,272 million dollars. Of this, 3,070 million covered physicians' services, and 1,747 million dollars went for "drugs and sundries." (3,130 million were spent on hospital charges.)¹ Or, to put it on a percentage basis, in round figures, 27 per cent of total medical care went to physicians' services, the same to hospitals and 15 per cent to drugs and sundries. Thus, next to the physician and hospital, the pharmacist has the largest stake in medical care (dentists' services 9 per cent) and will continue to do so since, in these days of synthetic chemistry and an expanding host of drugs, the care of the ill continues to swing more and more to the medical as contrasted to the surgical.

Dr. Cannon makes the point that the pharmacist should be a consultant to the physician and surely this is true. One may recall that on entering practice 30 to 35 years ago one used only a few drugs which were actually potent. These essentially were the drugs derived from plants, the tinctures and/or alkaloids of the poppy, the deadly nightshade and the fox-glove, as the Tr. of opium (morphine, heroin or codeine), Tr. of belladonna (atropine), and Tr. of digitalis, respectively. There was the valuable cinchona bark providing quinine, and cocaine derived from coca leaves. Dessicated thyroid gland and synthetic epinephrine represented the endocrine products. Certain natural chemical salts or metals had a function in therapy,—the salts of iodine, bromine, calcium, magnesium, iron, arsenic and mercury. Synthetic chemistry was offering its first products to the doctor, in aspirin, the salts of barbituric acid, certain coal-tar derivatives and salvarsan. Cod liver oil and citrus fruits provided specific treatment for Vitamin deficiencies. In those days the graduate, from his courses in materia medica, knew something of the solubility of drugs and the compounding of prescriptions. Now, if the young graduate has even the rare occasion to write a prescription to be compounded he may need to lean on the pharmacist to assist him. But even this aside, as Dr. Cannon points out, there are many thousands of drugs, practically all synthetic, available to the doctor. To be sure, many are duplicates, with slight chemical variations, since competing pharmaceutical houses must have every field of therapy covered. The pharmacist is the man to whom we should and must turn to help us through this maze of chemical formulations so that we may be of assistance to our patients. The pharmacist should have "up to the minute" knowledge of the advances in the therapeutic field.

The druggist can help us in the criticisms levelled at doctors in the matter of costs of medical care. He is most likely to meet the raised eyebrows when the patient pays for the antibiotics and other drugs. He, as Dr. Cannon points out, can soften the patient's momentary bitterness by telling what costs and suffering these substances may prevent,

¹Editorial: Expenditures for Hospitals and Physicians, J.A.M.A. 162:414, 1956.

rather than shrugging his shoulders. This item should stop the reader for a moment to ask himself whether he is rational in his prescriptions,—how much of the prescribed drug or antibiotic will go unused. How many times has he seen patients pull only half-empty bottles or boxes from his pocket representing a waste in prescription. The original prescription can always be supplemented if it is found that the patient tolerates a toxic drug or needs more of a given drug or antibiotic.

Not only do we need the cooperation of the pharmacist in the above matters but also in another that touches him more closely. This has to do with the "over the counter" prescribing. All too often the appellation of "doctor," as used for the pharmacist, carries this connotation, for all too frequently he prescribes for the ill person who wishes to avoid a doctor's fee. Collaboration between the pharmaceutical and medical professions may do much toward reducing this dangerous and unethical practice from which the patient may suffer and in the end may cost him much more than an early doctor's fee.

As is stressed in the Special Item there are a number of matters which might be scrutinized by liaison committees of pharmacists and doctors for their mutual benefit, which can end only for the ultimate benefit of the patient. This may be a field which officers of more local medical societies should plow.

R. H. K.

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Special Item

Doctor-Druggist Relationship

Bland W. Cannon, M.D.,* Chairman, Public Policy Committee, Memphis and Shelby County Medical Society

You have asked that my statements be directed toward the thought of how the pharmacist can assist the physician with public relations. Most of you, as do the majority of my colleagues, recognize the necessity of maintaining a good relationship with the public. This, in our profession, is primarily an individual matter between

physician and patient. Undoubtedly, this doctor-patient relationship has more effect on the human emotions in creating the feeling toward the medical profession (whether it be respect, disrespect, hatred, or love) than any program that might be sponsored by such groups as our local and national Medical Societies.

We must supplement this relationship with our Society activities in the community. This secondary or supplementary function has been the job of our Public Policy Committee.

Recently, in Memphis, our Medical Society has increased its activity in the field of public relations. These projects have included the initiation of mass polio inoculations. This program was put into effect in Memphis by our Society before the State program was decided. As a sponsor of the Educational TV station, the Society has not only given financial help but has produced a live program which has been running for thirteen weeks, entitled ACCENT ON HEALTH.

In the past two years we have sought to alleviate the differences long existing between the Press and our Medical Society. We have sponsored, with other groups, community projects. One of these was the Science Fair. Added to these are many other undertakings in the field of public relations, all of which are far less influential than that individual relationship between each physician and his patient. Likewise, you may be sure that the relationship existing between the pharmacist and his customer has a most profound influence on the public's opinion. No doubt many a patient complains bitterly about the cost of his medicines, but he will quickly defend his pharmacist.

With this factual background our attention is directed to the relationship of the physician and the pharmacist. We are in the same boat on the sea of public thought. The medical and pharmaceutical professions are in association in facing many similar problems, all demanding cooperation of thought and effort.

In gathering material for this address, I was surprised to learn that the relationship between these two professional groups

*An address given before the Tennessee Pharmaceutical Association on June 25, 1957, Memphis, Tenn.

was indeed a shaky one. A limited national survey revealed that on the whole the pharmacist thought less highly of his own doctor than did the general public, less of his doctor than did other special groups such as lawyers, secretaries, editors and nurses. In general, complaints were registered from both the pharmacist and the physician, which directed attention to the need for a better relationship. A rather extensive national survey disclosed further disturbing opinions of the public regarding the doctor-druggist relationship.

For instance, do you know that only 22 per cent of the public denied that their doctors received a commission from the druggist on their prescriptions? Mind you, only 22 per cent denied this! We are confronted with the question of what steps could or should be taken to bind our professions more closely.

First of all let us think what the physician can do to better this relationship with the pharmacist. *A physician must accept the pharmacist as a consultant rather than merely a dispenser of medications.* His consultation is and should be required on matters pertaining to medications, and as the source of this knowledge, he should be respected as a consultant. This is a most important role when one realizes that today the Food and Drug Administration is approving new drugs at the rate of 300 a year,—almost one new drug every day. The importance of the physician's knowing the pro's and con's of the benefits and contraindications of these drugs is obvious. However, for any physician today to have a complete knowledge of the many new drugs which are flooding into circulation would be impossible.

The pharmacist's role, on the other hand, has changed in that fifteen years ago he was compounding 75 per cent of the over-the-counter prescriptions, with full knowledge of his medications at his fingertips. Today 85 per cent of the prescriptions are proprietary preparations already compounded into capsule or pill. With the rapid increase in the number of these drugs on the market, knowledge of the many aspects of each preparation is more than a full-time job. Let us consider for a moment the antibiotics, or more specifically one

group in this category,—the "mycins." There exist more than 75 preparations of the "mycins" on your shelves today. Other antibiotics, such as the "sulfa" or "cillen" groups, are just as complex. Think of the number of antihistamine and allergy preparations, the number of tranquilizers and sedatives, and *ad infinitum* to 10,000!

There is real need for having someone so well informed on the details of all medications that he can act as a consultant. Thus, the physician in prescribing for his patient may do well to accept consultation and respect the pharmacist for his knowledge and assistance.

Secondly, the physician should assume and practice more rational prescription writing. The complaint that drugs are too expensive is frequently no fault of the pharmacist, but perhaps the fault of the physician in not using a rational method of prescription writing. Medicines are prescribed in good faith with earnest and scientific intention to alleviate suffering and disease. Some of these medicines, however, are necessarily expensive. In the best interest of the patient the physician might avoid the use of high priced drug equivalents. Consideration of this point by every physician when prescribing would require frequent consultation with the pharmacist, as he alone is in a position to know the comparable prices for similar medications.

A more rational writing of prescriptions would certainly avoid the tendency of over-prescribing. To know how much unused medicine can be found in homes today, or how many pills are thrown away yearly would make an interesting survey. Frequently a prescription for 50 tablets is given a patient who will be well after the fifteenth dose of his medication, or who finds, after the first eight or ten tablets that the medication has disagreeable side effects such as gastrointestinal upset, skin rash, etc. Most patients understand the reasons the remaining medication cannot be returned to the pharmacist. Thus, overprescribing can be a wasteful habit.

The physician should consider elimination of those prescriptions from which actual benefit is remote. All of these faults in prescription writing probably contribute fuel to the public's opinion that drugs and

medical care are too expensive, and the pharmacist cannot escape this criticism although it actually stems from the physician.

This next factor is seemingly important with reference to the public's opinion of the doctor-druggist association. We, as physicians, *should consider discontinuing the use of the prescription pad on which a certain pharmacy is specified.* I have purposely worded this sentence using the term "we," because in my office at the present time are prescription pads designating three different pharmacies. The practice of using prescription pads furnished free to the physician by the pharmacist (and printed with the physician's name and address, as well as the name and address of the drug store or pharmacy) has long been accepted, so long in fact that both the pharmacist and the physician have lost sight of the implications this practice must convey to the public.

You will recall the statistic mentioned earlier, that only 22 per cent of the public deny that physicians receive "kick-backs" on prescriptions. The patient must think there is some reason for the physician to use the prescription pad designating a certain pharmacy. The survey indicated that financial benefit was a frequent thought in the public's mind. We are confident that this public belief of a financial association is *100 per cent wrong!* The local Medical Society should attempt to correct this impression by requiring its members to use prescription pads printed especially for them without any designated pharmacy. On each prescription blank should be printed: "TAKE THIS PRESCRIPTION TO THE PHARMACIST OF YOUR CHOICE."

A general policy concerning prescription blanks would be welcomed by the majority of both doctors and druggists. This could be a definite step in clarifying the belief that the public has regarding the splitting of profits from drug sales.

The unnecessary dispensing and use of sample of medications by physicians might be wisely discouraged. The use of these drugs should be principally for the indigent patient. Perhaps this unwarranted use of sample medication is not frequent. Drug manufacturers and their courteous detail representatives supply a constant flow of

samples for the physician's office. Discretion in their use is advisable in order to avoid encroachment upon the field of the dispensing of drugs.

Thus far we have discussed some of the steps the physician must take in bettering his relationship with the pharmacist in the best interest of the patient and the public. I am sure that you as pharmacists are thinking of many others.

As physicians, on the other hand, we too have a few suggestions for ways in which the pharmacist might improve our association. *We welcome the more frequent consultation and advice of the pharmacist.* The avenue of consultation must be a two-way street for the two professions. In assuming the role of consultant, *we charge you to avail yourself of knowledge pertaining to each new medication. We urge the pharmacist to eliminate the counter-prescribing practiced by some of his colleagues.* We ask you to continue to *discourage self-medication and mass medication.* You are in a position of great influence in your community. Many daily opportunities arise when your advice is sought pertaining to matters of illness.

How many times are you asked by your customer, "Have you got something that will fix me up, or should I see a doctor?" There no doubt is a temptation in your sincere effort to help your customer to fulfill his first request. Since each such inquiry requires individual judgment, which places the druggist in a position of adviser to the patient, no rigid rule can be formulated to guide him. However, with the background of integrity and honesty which are characteristic of your profession, your decision is usually the right one.

Concerning drug costs, *we suggest that the pharmacists standardize their drug costs in each community* so that the same drug at different establishments would not bear different price tags. Complaints to the physician regarding this practice are not infrequent. Some of you here in Memphis are already following a method of standardization of prescription fees as scheduled by San Gabriel Valley.

We should like to see *the pharmacist maintain the dignity of the Apothecary.* We realize that it is necessary and desirable

for the drug store to feature many varied items not pertaining to medicine. However, distinctive separation of the pharmaceutical unit within the sundry, delicatessen, hardware, variety, and "have-everything" store seems advisable.

Finally, we would like for the members of *your profession to take the responsibility of educating and informing the public of the many factors regarding the cost of drugs*. This is your charge as a druggist as well as the responsibility of your local Society and the drug manufacturers. Are you aware that approximately 70 per cent of the American people believe that drug costs are too high?

You must be aware that when a customer takes a prescription to you to be filled, and receives a dozen pills along with a bill for \$10 with no explanation, he accepts his expensive package but not without an emotional upheaval which certainly does not create the image of a halo around his pharmacist's head.

Any of us would unhesitatingly say that certain antibiotics are a bargain at that price in light of what might have happened to the patient had such a medication not been available. Ten dollars worth of an antibiotic can eliminate the need for a \$400 hospital bill or perhaps an operation, such as a radical mastoidectomy, so frequently needed before the advent of antibiotics. You must assume the responsibility of explaining to each customer the factors concerning the price of his medication. You must also accept the responsibility of educating the public in your local community.

After thinking about some issues that confront both the pharmacist and the physician, let us consider what steps might be taken as a solution to these issues. The logical approach to a successful association is the *establishment of an inter-professional committee with representatives from the pharmaceutical and the medical professions* in each local community large enough to have been faced with the above problems. This is not a project to be handled on a national level. There is, as you know, a committee which handles differences between our national associations. You and I well know, regardless of their actions and suggestions, that little effect is felt in the

local community. Progress along this line necessitates local interest, enthusiasm and participation.

Some two years ago, the Committee on Public Policy for the Memphis and Shelby County Medical Society decided it would take some action to alleviate the poor relationship that existed between the physician and the newswriter or the local medical group and the press. The initial step was a meeting with representatives from both newspapers in Memphis. These representatives included science newswriters and city editors.

There were times during this initial meeting when it seemed impossible for the two groups to work out their differences. The picture was discouraging. However, most of the criticisms were brought out into the open, where they could be dealt with as a problem rather than as an underlying feeling. Following this initial meeting, a Code of Cooperation between our Medical Society and the local Press was compiled and written by the Public Policy Committee. This Code gave each member of our Society the actual knowledge of what he could and should do in regard to news releases and cooperation with the newswriter.

It stated rather clearly what the newswriter could expect from the physician and how the privacy of each patient must be maintained. The use of the Code of Cooperation is now in its second year.

If the members of your group here today had attended our recent meeting when this Committee convened with the same representatives of the Press, they would have seen that all feeling of antagonism, disrespect, and misunderstanding had been replaced by friendly cooperation, understanding and respect for members of both professions.

You must realize that the most important step in the success of this Code was the initial conference at which all problems were aired so that they could be analyzed in their proper prospective and dealt with accordingly. This Code of Cooperation and our medical-press relationship are now a model to medical-press groups in many areas of this country.

Why can we not adopt this same method in improving our doctor-druggist relation-

ship? Such an interprofessional committee should undertake to solve its problems, some of which we have mentioned. This first meeting would eliminate most of the petty professional prejudice that has stood in the way of full cooperation between the two groups.

Again I want to thank you for your invitation to appear before you, but more so for directing my attention to our interprofessional relationship. You may be sure that this will be a project of the Public Policy Committee of the Memphis Medical Society. With the cooperation of the pharmacists we shall have a committee within the next year to deal with our mutual problems. Eventually this committee should be enlarged to include representatives from the dental profession, the nursing profession, and the hospital association.

We anticipate that such a conjoined effort will be in the best interest of the patient and will enhance our relationship with the public.

DEATHS

Dr. J. Gilbert Eblen, 50, Knoxville, died August 24th at Sylva, North Carolina, Hospital as a result of a heart attack. Dr. Eblen was president of the Knoxville Academy of Medicine, past-president of the Knoxville Mental Health Society and Tennessee Pediatric Society and active in the American Academy of Pediatrics.

Dr. Lee K. Gibson, 63, Johnson City, died September 7th at Memorial Hospital after an extended illness. Dr. Gibson was a member of the Credentials Committee of the American College of Surgeons and a leader in many activities in his community.

Dr. Orlando G. Hughes, 85, Chattanooga, died August 21st at his home.

Dr. James M. Allen, 38, Trenton, died at his home on August 21st. His death was the result of a coronary thrombosis.

Dr. Ammon C. Moore, 88, Robertson County, died September 7th at the Springfield Hospital.

Dr. Malcolm Y. Marshall, 68, Murfreesboro, died August 28th at a Nashville Hospital. He was associated with the Veterans Administration Hospital for the past ten years.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Roane County Medical Society

The September 24th meeting was held in the Dining Room of the Oak Ridge Hospital. The program centered on the subject "The Role of the Medical Examiner." The speaker was Dr. Paul Guerin, Pathologist, Assistant Medical Examiner, City of Baltimore.

Consolidated Medical Assembly

The Consolidated Medical Assembly of West Tennessee held its regular meeting in the New Southern Hotel on September 3rd. The speakers were Dr. Willis E. Brown, and Dr. James Langdon of the Department of Obstetrics and Gynecology of the University of Arkansas Medical School. Dr. Allen Truex and Dr. Roy Douglas participated in the discussions.

Memphis-Shelby County Medical Society

Recent scientific meetings of the Society were conducted in the Institute of Pathology building. On June 4th the scientific program presented was as follows: 1. "An Interesting Case of Septicemia Due to Coliform Bacillus" by Dr. Howard Boone and discussed by Dr. Otis Warr. 2. "Aneurysm of the Renal Artery" by Dr. Phil Bleeker and discussed by Dr. Joseph Orman, Dr. John B. Hampshire, Dr. Turley Farrar and Dr. S. H. Trumbull. 3. "Acute Boric Acid Poisoning in An Adult" by Dr. Walter Hoffman, discussed by Dr. Gilbert Levy.

On July 2nd the scientific program consisted of a paper given by Dr. H. B. Holmes of Mount Gambier, South Australia, who spoke on the subject "An Attitude Toward National Medicine." He predicted Socialized Medicine for the United States unless the physicians worked together as a unit and fight constantly to preserve their independence.

At the August 6th meeting the scientific program consisted of: (1) "Nature's Mastoidectomy"—Case report by Dr. Lawrence Cohen, discussed by Dr. Chas. Blassingame and Dr. W. Likely Simpson; (2) "Sub-Total Resection of the Superior Maxilla," a motion picture presented by Dr. Edwin C.

Cocke, Jr., with discussion by Dr. Lawrence Cohen, Dr. Chas. Blassingame and Dr. W. Likely Simpson.

Knoxville Academy of Medicine

The Knoxville Academy of Medicine conducted its regular meeting on September 10th in the Academy Meeting Hall. The program consisted of a talk by Mr. Horace Cotton, president of the Professional Management, Inc., Southern Pines, N. C. Mr. Cotton served as a business consultant to the medical profession for a number of years. His subject was "The Business Side of Medicine." He discussed some of the principal aspects of private practice, particularly as they affect physicians' net income.

Due to the untimely death of Dr. J. G. Eblen, Dr. Alvin J. Weber assumed the Chair as President of the Knoxville Academy of Medicine.

Chattanooga-Hamilton County Medical Society

The annual president's dinner was conducted on September 20th with the president of the Tennessee State Medical Association, Dr. J. Paul Baird of Dyersburg, being the principal speaker. Dr. Baird outlined many important matters before the State Association and discussed in some detail the revisions in the proposed Tennessee Plan.

The Society's September 30th and October 1st meeting was held in conjunction with the program of the Tennessee Valley Medical Assembly at the Read House in Chattanooga.

Nashville Academy of Medicine and Davidson County Medical Society

The Society opened its fall meetings on September 10th with a dinner meeting at St. Thomas Hospital. A report discussing the Academy's affairs was given by the Board of Directors. Art Guepe, Coach for the Vanderbilt University Football team was the guest speaker and gave a "Preview of Vanderbilt Football."

Northwest Tennessee Academy of Medicine

The Society held a dinner meeting at the

hotel in Dyersburg on September 24th. Twenty-six members were present. Dr. Jean Hawkes, Memphis, spoke on the "Use of Orinase in Diabetes," and Dr. C. D. Hawkes, Memphis, on the subject of "Whiplash Injuries of the Cervical Region."

NATIONAL NEWS

The Month in Washington

In the last few years interest has built up in the problems of the older people—how they are to get their bills paid, how to spend their time constructively, what chronic medical conditions are causing them the most trouble. Innumerable national and local conferences have searched for ways to make life more satisfying and healthy for people entering old age, and committees are at work on the problem in thousands of communities.

In this favorable climate, when every device that might help the older citizens is being examined, there is being revived a scheme that met with no success at all when first proposed more than six years ago.

It is a plan for government-paid hospitalization under the Old Age and Survivors' Insurance system.

Here is the argument that is made for it: People in old age generally have less income than when they were younger, but at the same time they require more medical attention and hospital care. Neither voluntary nor commercial health insurance has been able to offer these people the protection they need. The only solution, sponsors of the plan say, is to get the federal government into the picture.

Opponents of the idea agree that older people are sick more often and generally don't have much money, but they disagree violently with the other arguments. They point out that slowly but surely insurance coverage is being extended to older people at a price they can afford to pay. Most important, hospitalization-at-65 critics maintain that a system like this is in effect national compulsory health insurance under Social Security. Early this year Reps. Emanuel Celler (D., N. Y.) and John Dingell (D., Mich.) introduced bills on this subject. They would allow sixty days a year free hospitalization for OASI-covered men 65 and over and women 62 and over. Rep. Kenneth A. Roberts (D., Ala.) offered a similar bill.

Just before the session ended two developments occurred that are evidence the proponents of this system of hospitalization are getting ready to make a real fight for it next year. First, Rep. Aime J. Forand (D., R. I.) presented a bill that would make extensive liberalizations in the social security program, including creation of a hospitalization that would give free surgical service to the aged program. Some national labor leaders

immediately pledged their support to this bill, a not unexpected move as the AFL-CIO is officially behind the general idea.

Then Senator Richard L. Neuberger (D., Ore.) made it plain he, too, wanted the old people to have free in-hospital medical care. The senator said he hadn't firmed up his thoughts, but that he believed the best approach would be something like the Military Dependent Medical Care program (Medicare), making use of Blue Cross or other nonprofit groups. He estimates that a 1% increase in payroll taxes for both employer and employee would meet the extra costs.

Mr. Forand, on the other hand, is specific. He would make all persons receiving OASI retirement benefits eligible and also surviving widows and children, but would not include persons receiving OASI disability payments. He would broaden the time period by allowing 120 days of hospital or nursing home care each year, with hospital stays limited to 60 days.

The Forand measure also has a provision, not contained in most earlier bills, for OASI also to pay for in-hospital surgical service certified as necessary by the physician. Mr. Forand would take no chance of running out of money. He would levy social security payroll taxes on all income up to \$6,000 (present limit \$4,200), and also increase the tax rate a half per cent for employer and employee alike, and three-quarters of one per cent for the self-employed.

It is almost certain that these and other similar suggestions will receive serious consideration by Congress next year, with passage of a bill much more likely than in 1951 when President Truman and Oscar Ewing first proposed the idea. (From the A.M.A., Washington Office.)

Government Medical Care Is Expanding

Nearly one of every four persons, including 22,000,000 veterans, is eligible to receive some degree of medical care without cost from the federal government.

Some of the greatest activity in the health field has involved laws and amendments that widen the scope of medical care for federal beneficiaries. The newest is Medicare, voted last year for military dependents.

As of last January 1, there were 22,599,000 living veterans; 5,200,000 military personnel and their dependents; 300,000 beneficiaries of the Public Health Service, including 200,000 seamen, but excluding beneficiaries of the Federal Employees' Compensation Act and Indians; 5,100,000 public assistance recipients; 370,000 Indians and Alaskan natives receiving care in 56 federal hospitals or in private facilities under contract, and 4,000,000 beneficiaries of the Federal Bureau of Employees' Compensation Act (at-work injuries only).

There were 48,627 P.H.S. hospital admissions in 16 hospitals in 1956; 1,042,000 out-patient visits in 121 P.H.S. facilities and 7,000,000 federal employees and dependents who will be eligible for health care if proposed legislation is enacted.

AMA House of Delegates Passes UMWA "General Guides"

Free choice of physicians, fee-for-service and relationships with the United Mine Workers of America were the subjects of long and serious consideration before action was taken on the third party issue by the American Medical Association's House of Delegates at its 1957 annual meeting in New York.

"Suggested Guides to Relationship Between State and County Medical Societies and the United Mine Workers of America Welfare and Retirement Fund," which was submitted for consideration by the AMA's Committee on Medical Care for Industrial Workers and amended by the Reference Committee, was finally passed by the House.

The committee's recommendation was considered at the same time resolutions from five states on the third party issue were studied by the House of Delegates.

In approving the statement of "General Guides," the House of Delegates recommended that the Board of Trustees study the feasibility of setting up similar guides for relations with other third-party groups such as Labor Management Health and Welfare Plans.

The statement, which outlines both medical society and UMWA responsibilities, contains these "General Guides":

1. All persons, including the beneficiaries, of a third-party medical program such as the UMWA Fund, should have available to them good medical care and should be free to select their own physicians from among those willing and able to render such service.

2. Free choice of physician and hospital by the patient should be preserved:

- (a) Every physician duly licensed by the state to practice medicine and surgery should be assumed at the outset to be competent in the field in which he claims to be, unless considered otherwise by his peers.

- (b) A physician should accept only such terms or conditions for dispensing his services as will insure his free and complete exercise of independent medical judgment and skill, insure the quality of medical care, and avoid the exploitation of his services for financial profit.

(c) The medical profession does not concede to a third party such as the UMWA Welfare and Retirement Fund in a medical care program the prerogative of passing judgment on the treatment rendered by physicians, including the necessity of hospitalization, length of stay and the like.

3. A fee-for-service method of payment for physicians should be maintained except under unusual circumstances. These unusual circumstances shall be determined to exist only after a conference of the liaison committee and representatives of the Fund.

4. The qualifications of physicians to be on the hospital staff and membership on the hospital staffs is to be determined solely by local hospital staffs and by local governing boards of hospitals.

MEDICAL NEWS IN TENNESSEE

Influenza and "Medicare"

The Department of the Army has issued a general ruling relative to the care of dependents under the Medicare program.

General: The treatment of eligible dependents with influenza under the Dependents' Medical Care Program will be in accordance with the general provisions of the program. If hospitalization is not required, outpatient care by civilian physicians will be the responsibility of the patient. Where hospitalization is required, all the provisions of the program apply as for other medical cases.

Immunization: Immunization for this disease is a procedure normally administered on an outpatient basis. Consequently, dependents, including those receiving obstetrical and maternity care, will not be eligible to receive influenza vaccine at Government expense, except as may be provided for in medical facilities of the uniformed services. (A recent resolution of the State and Territorial Health Officers indicates that immunization for infants under three months of age is not recommended. Therefore, influenza vaccine for newborn is not authorized.)

More About Dependents Medical Care (Emergency Care)

Misinterpretations concerning the types of emergency care authorized under the Dependents' Medical Care Program appear to exist in various areas of the state.

Acute emergency care of any nature in a hospital is covered under the program. Such emergency care for an illness or condition not otherwise covered is only authorized pending arrangements for care elsewhere.

Essentially the Dependents' Medical Care Program is an *in-patient* program, providing for *out-patient* care only in the following areas: (1) Obstetrical and maternity services; (2) bodily injuries, limited to the treatment of fractures, dislocations, lacerations and other wounds; (3) diagnostic tests and procedures prior to and/or following hospitalization for the same bodily injury or surgical procedure for which hospitalized; and (4) radiotherapy prescribed during a period of hospitalization and continued, or carried out on an out-patient status.

Irrespective of the existence of an emergency, the above constitutes the only areas in which *out-patient* care can be authorized under the program. In view of the foregoing, emergency care to be payable by the government under the Dependents Medical Care Program must be either: (1) out-patient care as stated above, which is normally provided for under the program; or (2) care furnished to a patient who is admitted to a hospital as an in-patient irrespective of whether the hospital meets the definition of a "hospital" as defined in the joint directive.

University of Tennessee College of Medicine

Research grants totaling \$26,993 have been awarded to the Division of Preventive Medicine. \$13,700 has been received for the support of the glaucoma detection program which is conducted at John Gaston Hospital in cooperation with the Department of Ophthalmology; of this amount \$10,200 has been awarded by the U. S. Public Health Service; \$2,000 by the Memphis Lions Club; \$1,000 by the Pilot Club, and \$500 by the Dawkins Electric Company. A \$4,800 grant

from the Health Service will finance a diabetes detection program, conducted jointly with the Division of Medicine. The Memphis Heart Association has contributed \$4,693 for a study of viral and bacterial infection in orphanage children.

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Seventeen staff members received promotions. Advanced from assistant professors to associate professors were Dr. Mary F. Poe, Department of Anesthesiology; Dr. Alfred P. Kraus, Department of Medical Laboratories; Dr. Russell Patterson and Dr. Edward H. Storer, Department of Surgery. The following were advanced to assistant professors from instructors: Dr. Robert E. Bailey and Dr. Robert W. Neilson, Division of Anatomy; Dr. Robert L. Fischer, Dr. Frederick W. Lengemann and Dr. William E. Jefferson, Division of Chemistry; Dr. Richard P. White, Division of Pharmacology; Dr. Friedrich P. Diecke, Division of Physiology; Dr. Gerald B. Spurr, section of Clinical Physiology and Christine Neyman, School of Nursing. Dr. William A. McClellan was promoted from assistant to instructor in the General Practice Out-patient Department, and Dr. Helmer P. Agersborg, from research assistant to instructor, section of Clinical Physiology.

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For the first time a postgraduate program in industrial medicine will be offered mid-south physicians, from October 16 to 18 at the Medical Surgical Building. It will be under the direction of Dr. William A. McClellan, instructor in the General Practice Out-patient Department.

Dr. Friedrich Diecke, of the Division of Physiology has been awarded a \$17,900 grant by the National Science Foundation for a three-year study on how the smelling mechanism functions.

Vanderbilt University School of Medicine

Public Health research grants, totaling \$71,155, were awarded to four Vanderbilt University departments. The Department of Surgery received three grants totaling \$47,908, one award being made in connection with the heart lung technic work developed during the past year. The Department of Pharmacology received a grant of \$19,855.

Dr. Harris D. Riley, Jr., Instructor in Pediatrics, has accepted the position as Professor of Pediatrics and Chairman of the Department of Pediatrics at the University of Oklahoma School of Medicine, Oklahoma City.

PERSONAL NEWS

Dr. A. H. Lancaster, Knoxville, has been appointed a member of the Council of the Southern Medical Association for a five year term. Dr. Lancaster succeeds **Dr. Charles R. Thomas**, Chattanooga, whose term expires.

Dr. Harry N. Waggoner, Johnson City, has been named director of professional services at the VA Center, Biloxi, Mississippi.

Dr. R. H. Shilling, Gatlinburg, President of the Sevier County Medical Society, was the recent speaker at the dedication of the Sevier County Health Center.

Dr. Charles H. Alper, Chattanooga, will spend six weeks in Vienna, Austria, studying new techniques developed for surgery for deafness.

Dr. John W. Adams, Jr., Chattanooga, was a recent TV speaker in Chattanooga on the subject of "Blood Bank."

Dr. Eugene Howard, Jefferson City, has joined **Dr. R. M. McCown** in the practice of medicine and surgery in Jefferson City.

Dr. Bland Cannon, Memphis, was a recent speaker on a nation-wide radio network. His subject was Asiatic Flu.

Dr. Otis Warr, Memphis, has been named president-elect of the Tennessee Heart Association. **Dr. A. J. Moses** of Chattanooga was elevated to president.

Dr. J. H. Waldrop, Lewisburg, will open offices for the practice of general medicine and surgery at Eagleville.

Dr. Ray DePue, Knoxville, has announced the opening of his office for the practice of medicine in Maryville, Alcoa area. He specializes in diseases of the ear, nose and throat.

Drs. Thomas Frist, Oscar F. Noel, William J. Card and **Paul Morrissey, Jr.**, all of Nashville, have been named to the Nashville General Hospital Board of Commissioners.

Dr. John K. Twilla, Woodbury, has left the Woodbury Medical Clinic to accept a position of resident in a large hospital.

Dr. Dan C. Gary, Union City, was a recent guest speaker at the Kiwanis Club.

Dr. John Carter and **Dr. Joseph Graves**, both of Chattanooga, were recent guests at the Jaycee Question of the Week program over a Chattanooga television station. They discussed causes of cancer of the lung.

Dr. Arch Smith, Franklin, has left to take up his practice of medicine at Signal Mountain.

Dr. Robert Banner, Kingsport, was a recent speaker before the Kingsport Lions Club.

Dr. Robert M. Foote, Nashville, addressed the District III, Tennessee State Nurses Association recently on the subject, "Facts About the Tranquilizers."

Dr. Rollin A. Daniel and **Dr. Hollis E. Johnson**, Nashville, recently lectured on a diagnosis of carcinoma of the lung at a chest disease symposium in Madisonville, Kentucky.

Dr. C. T. Stubblefield, Viola, has opened his office for the practice of medicine at Decherd.

Dr. M. D. Smith, Johnson City, has been elected chairman of the medical staff of Memorial Hospital. **Dr. L. E. Gordon, Jr.**, was elected vice-chairman and **Dr. Walter McLeod** was elected secretary-treasurer.

Dr. Warren Kimsey, Chattanooga, was the weekly luncheon meeting speaker of the Sertoma Club.

Dr. Raymond Bunn, Sevierville, began his practice with **Dr. J. R. Van Arsdall** and **Dr. Charles L. Roach**, effective the first of September. Dr. Bunn was formerly of Harlan, Kentucky.

Dr. Gene H. Kistler and **Dr. Harry Stone**, President and Secretary respectively of the Chattanooga and Hamilton County Medical Society, were recent speakers on a television program entitled "Are Doctors Charges Too High."

Dr. W. E. Boyce, Hohenwald, was recently honored for 45 years of service to his community.

Dr. George Lumb, Memphis, has been elected an honorary member of the section on proctology of the Royal Society of Medicine, a British scientific organization.

Dr. Jack Ross, Clarksville, has been elected Chief of the division of obstetrical services for Memorial Hospital.

BOOK REVIEW

Principles of Clinical Electrocardiography. By **Mervin J. Goldman, M.D.**, University of California School of Medicine. 306 pages. Lange Medical Publications, 1956, Los Altos, Calif. Price \$4.50.

The author has ably presented the basic concepts and their clinical application in this volume on clinical electrocardiography. This publication is distinctive in simplicity of its presentation, its numerous line drawings, and its avoidance of much complicated and controversial material. The figures are clear and the electrocardiograms are well reproduced. Although one may differ in many details from the interpretation of the electrocardiograms, the author has achieved his purpose in writing a practical monograph on electrocardiography geared primarily to the medical student and the house staff level. This publication is excellent and is recommended by the reviewer.

—SAMUEL S. RIVEN, M.D.

The Fight for Fluoridation. By **Donald R. McNeil**. 236 pages, New York: Oxford University Press, 1957. Price \$5.00.

The author, who received his M.S. and Ph.D. degrees in History from the University of Wisconsin, presents the fluoridation story in narrative form. It is an informative, dramatic, non-technical, but thorough account of the development of the fluoridation hypothesis and its promotion throughout the United States.

Although endorsed by more than two hundred nationally known organizations including the American Dental Association, the American Medical Association and United States Public Health Service, fluoridation remains a controversial and political subject. The fluoridation of public water supplies is far from completed and is opposed by strong groups whose motives and methods are well documented.

The text is cloth bound and contains no illustrations.

—F. M. MEDWEDEFF, D.D.S.

The Chemistry and Biology of Purines. Ciba Foundation Symposium. Edited by **G. E. W. Wolstenholme** and **Cecilia M. O'Connor**. 317 pages, 124 illustrations. Little Brown and Company, Boston, Massachusetts. 1957. Price \$9.00.

The usual high standard of Ciba Foundation Symposium publications is maintained in this publication. The synthesis and degradation of purines is extensively reviewed. The biologic activity of certain carcinostatic purines is presented with particular attention being paid to antileukemic agents. One chapter is devoted to a discussion of the antibiotic puromycin, the first naturally occurring aminopentose to be described. This antibiotic appears to owe its biologic activity to its interference with purine metabolism. This monograph, although of particular value to the biochemist, contains several chapters that should be of interest to the oncologist.

—ALLAN BASS, M.D.

The American Fluoridation Experiment. By **F. B. Exner, M.D.**, and **G. L. Waldbott, M.D.** 264 pages, New York: The Devin-Adair Company, 1957. Price \$3.75.

This work represents a rabid attack on the fluoridation program by two physicians, and is edited by Mr. James Roty, a journalist. Although written in a highly opinionated manner, the text does contain many references to the literature on fluorides. The authors have been leaders in the antifluoridation movement and have supplied arguments for those opposing this public health measure. The book is of interest as a presentation of the views in opposition to fluoridation measures.

The text is paper bound, indexed, and contains a list of organizations opposed to fluoridation.

—F. M. MEDWEDEFF, D.D.S.

ANNOUNCEMENTS

Fourth Annual Meeting of the Academy of Psychosomatic Medicine

The fourth annual meeting of the Academy of Psychosomatic Medicine will be held October 17-19, in Chicago at the Morrison Hotel. The theme this year will be "Psychosomatic Aspects of Obstetrics, Gynecology, and Endocrinology, including Diseases of Metabolism." The purpose of the Academy is to bring psychosomatic medicine to the nonpsychiatrically oriented physician in a practical manner.

Pediatric Postgraduate Day

The Pediatric Department at Vanderbilt University School of Medicine announces another Postgraduate Day for Thursday, November 21, to be held at Vanderbilt University Hospital. Pediatric concepts which have been clarified in the last few years will be discussed, as well as other recent advances in prevention and therapy. Interesting clinical material on the Ward at the time will be presented.

Southeastern Allergy Association 12th Annual Meeting

The Southeastern Allergy Association will conduct its 12th annual meeting on November 1st and 2nd at the Fort Sumter Hotel in Charleston, South Carolina. An outstanding program has been developed.

New Physicians Licensed in Tennessee

The following physicians have been licensed to practice medicine in the state of Tennessee.

Brackett, William D., Chattanooga
Adamson, Godfrey D., Jr., Denver, Colo.
Burrus, Roger B., Donelson
Sharp, Vernon H., III, Franklin
Prather, James R., Memphis
McCreary, Wm. H., Jr., Paris
Carney, Edward K., Nashville

Fields, John P., Nashville
Hays, James W., Nashville
Minor, Thomas M., Paris
Snyder, William B., Frankfort, Ky.
Spickard, William A., Nashville
Phillips, Frank E., II, Petersburg, Fla.
Sutterland, Hugh L., Jr., Nashville
Ellington, Anna L., Birmingham, Ala.
Keyes, Harmon E., Jr., Memphis
Wolfe, David C., Muskogee, Okla.
Watson, Cecil L., Memphis
Gililland, John L., Memphis
Fong, F. H., Memphis
Bowlin, Barney H., Memphis
Adel, Frank E., Columbus, Ga.
Gray, Mary A., Jackson, Miss.
Parker, William P., Jr., Chapel Hill, N. C.
Bond, Arthur G., Clarksville
Carlisle, Bob B., Nashville
Crudden, Charles H., Harlan, Ky.
Wilkes, John W., Memphis
Terry, James W., Jr., Memphis
Lampert, Ronald M., Long Beach, N. Y.
Jones, Stewart G., Denver, Colo.
Williams, Jesse L., Jr., Chattanooga
Crawley, James R., Jr., Memphis
Myre, Theodore T., Memphis
Cook, Lewis H., Memphis
Clarke, Hugh A., Johnson City
Nesbitt, Tom E., Milwaukee, Wis.
Patrick, Bernard S., Memphis
Vandiver, Clayton, Jr., Columbus, Ohio
Crounse, Kenneth L., Oak Ridge
White, Arthur C., Nashville
Deer, Philip J., Jr., Memphis
Graham, Ernest E., Nashville
Garratt, James A., Starke, Fla.
Goldfarb, J. H., Nashville
Heimbürger, Irvin L., Nashville
Fox, Maurice, Chattanooga
Holmes, John P., Jr., Lexington
Johnson, Robert A., Jackson, Miss.
Kalman, Cornelius F., Nashville
McCroskey, David L., Nashville
Miller, Charles E., Columbus, Ohio
Wolff, Sheldon M., Nashville
Scott, Samuel E., Rumsey, Ky.
Silber, David L., Jr., Nashville
Sandt, John J., Syracuse, N. Y.

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The serious nature of intestinal obstruction is recognized by all. The early diagnosis may pose difficulties and yet is most important. It is here that the first doctor who sees the patient may hold the key to prolonged postoperative morbidity or even to life.

INTESTINAL OBSTRUCTION*

GEORGE E. DUNCAN, M.D., Nashville, Tenn.

One of the most satisfying experiences the surgeon can have is to see a "good risk" patient with all the symptoms and signs of intestinal obstruction serious enough to warrant immediate operation, and upon opening the abdomen to see loops of dilated small bowel of good color and loops of collapsed bowel which immediately tell him he has operated in time. With a minimum of trauma he locates the offending adhesive band, easily relieves the obstruction and, finding no other trouble, closes the incision and returns the patient to the ward, confident that he will soon be well.

But life is not that simple, nor is it that easy. To be sure, a typical early case of intestinal obstruction with clear indications for operation is occasionally seen. It is, however, more common to see a patient with some pain, a little vomiting, no distention or fever and few, if any, X-ray findings. Such a case taxes the surgeon's diagnostic acumen to the limit. If he operates upon all such patients early, his incidence of unnecessary surgery becomes high. On the other hand if he waits until the symptoms and signs are clear cut he finds that he has permitted a high incidence of gangrenous bowel, his patients have a long period of morbidity and his mortality rate rises. It becomes obvious then, that if our patients are to receive the superior type of medical care we want them to have, we should all be thoroughly familiar with this disease to the end that accurate diagnosis can be made and treatment can be instituted at the right time.

*Read before the meeting of the Tennessee State Medical Association, April 8, 1957, Nashville, Tenn.

Obstruction in the Newborn

The etiology of intestinal obstruction in infants becomes clear when we realize that in the four week embryo the entire gut is a hollow tube. The duodenum grows rapidly and rotates counter clockwise around the superior mesenteric artery making the pancreas contained in its mesentery a retroperitoneal organ. The epithelium of the duodenum proliferates occluding its lumen at six to ten weeks. The duodenum then recanalizes as the Brenners' glands and other histologic structures develop. The rest of the small intestine grows so fast that it cannot be contained within the abdominal cavity and every individual has a large umbilical hernia during his embryologic development. The epithelium of the jejunum, ileum and colon also proliferates but does not normally occlude the lumen. As the small bowel is drawn back into the enlarging abdominal cavity, the colon undergoes a counter clockwise rotation and comes to lie in its normal position. The anal dimple and rectum join at about the seventh week.

Disturbances in this developmental process help us suspect the common causes of intestinal obstruction in the newborn which are:

(1) Imperforate anus—occurring about once in 8,000 births is a minor but important embryologic omission.

(2) Atresia and stenosis—a failure of the proliferating epithelium to properly regress.

(3) Meconium ileus—which is associated with hepatic and pancreatic insufficiency and which should not be confused with meconium peritonitis.

(4) Adhesions and congenital malrotation—in view of the complicated elongation

and rotation occurring in the developing bowel, it is surprising that obstruction from bands is not more frequent.

(5) Hernia—both internal and external may cause obstruction in the newborn.

(6) Inflammatory obstruction (meconium peritonitis)—occurs when a band obstructs in utero causing rupture of the bowel. A chemical peritonitis is produced by the freed meconium which frequently calcifies, producing fatal obstruction.

(7) Megacolon or Hirshsprungs' Disease—a functional type of obstruction due either to the absence, or a deficiency of the parasympathetic ganglia of Meissner and Auerbach.

Pyloric stenosis and intussusception, which are common causes of obstruction in children, rarely occur in the first two weeks of life. Should the reader want to remember the common causes of obstruction in the newborn, the first letter in the first words above spell out the phrase I AM A HIM.

Physiology of Obstruction

As we pass from the consideration of intestinal obstruction in the newborn to that occurring in older people, it is well to consider a subject which is tremendously important and which is common to both groups. This is the change which occurs in the wall of the obstructed bowel.

(1) When the lumen of the bowel is occluded, peristalsis increases against the obstruction and there is *pain*.

(2) Fluid backs up proximal to the obstruction.

(3) Pressure rises in the lumen of the bowel and the thin veins in the bowel wall become occluded. The thicker walled arteries do not immediately become occluded so blood continues to flow into the diseased segment of bowel.

(4) Increasing peristalsis increases the secretory function of the bowel pouring large quantities of fluid into the lumen. This quantity is made even greater by extravasated blood from the ischemic veins.

(5) As the bowel becomes overdistended peristaltic waves cease and extravasation of fluid and bacteria occurs into the peritoneal cavity.

(6) Ischemia in the presence of patho-

genic bacteria inevitably leads to necrosis.

Gas in the intestine, 70 per cent of which is swallowed and about 30 per cent of which comes from the digestive processes, hastens the onset of necrosis of the bowel wall and furthers the vicious cycle of distention, hypersecretion and decay.

It is obvious that the surgeon's diagnostic ability must be keen enough to interrupt this course of events early before the bowel wall has been irreparably damaged. In simple obstruction from an adhesive band which may be incomplete for a time, the changes which lead to necrosis may develop over a period of several days. On the other hand, in strangulating obstruction these changes develop in a matter of hours. The tremendous importance of distinguishing between simple and strangulating obstruction is immediately apparent. For practical purposes then, this whole paper may be considered in the light of the solution of this problem.

Etiology

In adults, 50 per cent of all cases of obstruction are due to adhesions, 35 per cent are due to hernia and the remaining 15 per cent may be due to one of the rarer causes, such as volvulus, Meckel's diverticulum, inflammatory lesions, intussusception and bezoars. The recent trend toward radical abdominal surgery for certain malignant conditions may push higher the percentage of cases of obstruction due to adhesions.

It is important to point out that after every abdominal procedure in which the bowel is handled adhesions are formed. Usually these are very thin, consisting primarily of fibrin. As normal peristalsis returns these adhesions disappear over a period of from one to four weeks. If, however, the insult to the bowel's serosa has been great, the adhesions become fibrous and thickened. We may therefore conclude that the "greater the insult, the greater the adhesions." Broad band adhesions, such as those formed when a long loop of bowel is adherent to the peritoneum, may cause a low grade of obstruction. No particular difficulty results unless acute angulation of the bowel occurs at either end. These adhesions, however, may be stretched by the peristaltic activity of the bowel to the nar-

row band which may be the source of much trouble. Bands may obstruct by:

- (1) lying across the bowel;
- (2) attaching to a relatively small surface of the serosa producing a kink; and
- (3) forming a ring through which a loop of bowel may be caught.

Regardless of the cause of the obstruction the changes in the bowel wall are essentially the same. If complete obstruction takes place suddenly, or if the circulation to a segment of the bowel is occluded all at once, step one through six may occur in a matter of a few hours. If obstruction is only partial a low grade inflammatory process may be initiated in the wall of the bowel which may lead to thickening, poor peristalsis and diminished absorption. Many patients do not eat because eating produces pain. If absorption is also poor, chronic malnutrition may develop.

Symptoms

If one will remember the six changes listed above, which may occur with varying rapidity in the obstructed bowel, the symptoms of obstruction will be recognized and understood. What are these symptoms?

(1) *Pain* is usually the most outstanding symptom of intestinal obstruction. It is likely to be sudden in onset, intermittent in occurrence, and cramping in nature. It is usually severe, similar in intensity to the pain of obstruction in other systems, as the pain of renal colic, gallstone colic and the well known colic of child birth. The periumbilical location of small bowel pain is well known. As the disease progresses, however, and inflammatory changes occur in the bowel wall, the pain may become constant and be associated with other signs of peritoneal irritation.

(2) *Hyperperistalsis* is usually an early sign. The peristalsis of obstruction occurs in rushes, frequently coinciding with the height of the pain. The sounds are high pitched and numerous tinkles are present. Unless treatment is instituted before marked inflammatory changes occur, peristalsis ceases. The silent abdomen following a period of hyperperistalsis is a grave sign and usually constitutes an indication for immediate exploration. Narcotics given before the diagnosis is established may

make these two valuable findings valueless and may lead to a false sense of security.

(3) *Vomiting*. An early symptom in high obstruction and a late symptom in low obstruction may be persistent and violent. The patient is frequently unable to understand where all the fluid is coming from, not realizing that the wall of the small bowel is primarily secretory, capable of liberating large quantities of fluid.

(4) *Distention* occurs in about 80 per cent of all cases of obstruction. It must be realized, however, that this sign may be late. The surgeon who waits for distention to develop before operating will have a high morbidity and mortality from gangrenous bowel.

(5) *Constipation* usually accompanies intestinal obstruction and an absence of bowel movement is the rule. In an occasional case, however, the patient may have bowel movements after the onset of the disease from intestinal content below the point of obstruction.

X-Ray and Laboratory Findings

We have thus far considered the etiology, the pathologic physiology and common symptoms of intestinal obstruction. What help can we obtain from the X-rays and laboratory in making the diagnosis? I believe I am safe in saying that in the early case we can obtain exactly *none*. The diagnosis of early intestinal obstruction is a clinical diagnosis and not an X-ray or laboratory diagnosis. X-ray films taken when the pain is great and the vomiting is profuse may show normal gas patterns. Gangrenous bowel may be present and the films may look perfectly normal. The white blood count, sedimentation rate, temperature and pulse are frequently normal and signs of hemoconcentration may be absent. The NPN may be elevated late.

In all fairness to those concerned, I must say that both the X-ray and the laboratory are invaluable aids in ruling out other conditions. Also, X-ray evidence of intestinal obstruction is quite definite and helps the surgeon to proceed with confidence that his diagnosis is correct. I want to emphasize further, however, that we must strive to diagnose these cases before X-ray and laboratory changes take place.

Differential Diagnosis

No paper on this subject would be complete without a word about the differential diagnosis. Before operating the surgeon must carefully consider the possibility of the existence of other conditions giving some or all of the symptoms and signs of intestinal obstruction. Some of these conditions are listed:

(1) *Gastroenteritis*. While pain, vomiting, distention and hyperperistalsis may be present, a history of food indiscretions and diarrhea help to rule out this condition.

(2) *Gallbladder disease, appendicitis, twisted ovarian cyst*. All of these must be considered and ruled out by appropriate means.

(3) *Pancreatitis*. This usually gives rise to abdominal pain, vomiting and slight distention. The bowel sounds may be normal or absent. Elevation of the serum amylase helps us diagnose this condition.

(4) *Perforated peptic ulcer*. This condition with its board-like abdomen and X-ray evidence of gas under the diaphragm is usually no problem.

In planning his attack the surgeon must also consider the possibility of other less common causes of obstruction which may alter what he has to do. Some of these conditions are:

(1) A malignant lesion of the colon requiring, if possible, preparation of the bowel before surgery.

(2) Ileitis which may be segmental and requires either a short circuiting procedure, resection of the bowel, simple decompression without resection, or no surgical treatment at all.

(3) Mesenteric thrombosis is a most unsatisfactory condition to treat as this may require anastomosis of the upper jejunum to the middle of the transverse colon and removal of all the intervening bowel.

(4) Gallstone ileus, bezoars, volvulus and intussusception all must be considered and diagnosed preoperatively, if possible.

Indications for Surgery

Assuming that a diagnosis of intestinal obstruction has been made we are then faced with the answer to one question. Is this patient a candidate for operation? We have mentioned that some cases should be

operated upon as soon as the diagnosis is made and that there are others who do better without it. In the light of the foregoing statements we can reach some definite conclusion about the indications for surgery.

I. Patients who are thought to have strangulation obstruction should be operated on as soon as possible. The question then arises what are the symptoms and signs of strangulation obstruction.

(1) Accelerated picture, the onset of pain, hyperperistalsis, vomiting, distention and constipation may take place in rapid succession.

(2) A palpable mass may be present.

(3) The signs of peritoneal irritation are frequently seen (local tenderness, rebound tenderness and referred tenderness, and persistent pain between peristaltic rushes).

(4) The systemic signs of inflammation may be present, such as, elevated pulse, temperature, increased sedimentation rate and elevated white blood count.

(5) X-ray study may show a mass in the abdomen without fluid levels or distorted gas patterns. This, of course, represents a loop of bowel which is full of fluid and obstructed at either end.

May I emphasize once more that the X-ray investigation may be normal in one half of the cases of strangulation obstruction.

II. In cases of simple obstruction operation should be done as soon as the diagnosis is made and the patient's condition permits it, unless definite improvement takes place on relatively short conservative treatment.

III. There are cases showing symptoms of intestinal obstruction in which, in general, operation should be avoided and in which conservative measures should be used. They are:

(1) Patients with so-called chronic intestinal obstruction who have a history of several previous abdominal operations and who are found to be only partially obstructed.

(2) Patients with an inflammatory lesion of the bowel with an obstructive component, such as the postappendectomy patient with peritonitis or patients with known ileitis incompletely obstructed and incompletely prepared.

(3) We should include in the nonoperable

group the patients who are in extremis and in whom the operation itself would prove fatal. (Fortunately, these cases are rare.)

Adjuncts to Surgical Treatment

The marked reduction of mortality and morbidity rates in modern surgery have to a large extent been brought about by improvement in preoperative and postoperative care. This is most certainly true in cases of intestinal obstruction.

The relief of distention is to be desired. A tube which will extend through the pylorus into the small intestine such as a Miller-Abbott or Cantor tube is most helpful. Occasionally, 8 to 12 hours may be spent passing these tubes. The fluoroscope should be used to check the course of the tube. Where time does not permit the passage of the decompressing tube a simple Levine tube may be satisfactory. It is to be remembered that some 70 per cent of the gas in the intestine is swallowed air. Regardless of which tube is selected it should be left in place until peristalsis is restored and the anastomosis suture lines are considered secure. This period is usually 2 to 5 days postoperatively.

The restoration of fluid balance and blood volume and its maintenance into the postoperative period, so as to obtain a urinary output above 1000 cc. daily is most important. While the external loss of fluid and electrolytes should be estimated and replaced, it should be noted that both electro-

lytes and blood are lost from the blood stream into the involved bowel first, and the daily administration of 4000 to 6000 cc. of fluid is occasionally indicated.

Secondly, if the obstruction is high, as in the duodenum, much acid is lost from the stomach and alkalosis may result. On the other hand if the obstruction is in the lower jejunum or ileum, large quantities of alkali are lost, resulting in acidosis. Careful attention to the patient's CO_2 , chlorides, NPN and blood volume is important during the preoperative and postoperative periods.

The wise use of antibiotics in both preoperative and postoperative periods has saved many lives. We have used large doses of penicillin and streptomycin intraperitoneally in special cases where marked contamination has occurred. These patients have done well. Outstanding authorities on the subject maintain that equally good results may be had from systemic administration of these antibiotics.

Conclusion

In summary, then, we have discussed the embryology and physiology of the bowel as it is related to intestinal obstruction. The symptoms and signs of this disease have been stressed with emphasis on the differentiation between simple and strangulated obstruction. The indications for surgery in this disease have been listed, and the essential care in the preoperative and postoperative period has been described.

Urine Glucose Testing by Glucose Oxidase Methods: A Critical Evaluation. Jablow, Victor, Hutchins, Merrill, and Knights, Edwin M., Jr. *J. Am. Diabetes Assn.* 6:426, 1957.

While enzyme reactions are the basis of many tests used in clinical medicine, the fickleness of these procedures is well known to the clinical chemist and pathologist. The use of glucose oxidase as a test for urine glucose gives rise to considerable inaccuracy in clinically significant ranges of glycosuria on a quantitative basis. On the other hand, its extreme sensitivity to minute concentrations of glucose in the urine must be made very clear to the patient lest he overdose himself

into insulin shock. A survey in which 36 physicians and technologists interpreted 360 glucose dilutions in urine disclosed that while Tes-Tape and Clinistix are qualitatively accurate, the former gives misleading quantitative results with glucose concentrations over 0.1 percent. Higher concentrations of glucose were consistently under-evaluated, a situation which could prove dangerous in the poorly controlled diabetic. Both products appear to be useful as screening procedures in the clinical laboratory. (Abstracted for the Tennessee Diabetes Association by Charles A. Rosenberg, M.D., Memphis.)

Thromboangiitis obliterans is probably more common than is appreciated. Its clinical manifestations may be varied. The early interdiction of smoking is mandatory.

BUERGER'S DISEASE: Case Reports and Comments

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In reviewing our cases of peripheral vascular disease it was apparent that Buerger's disease or thromboangiitis obliterans was the most commonly misdiagnosed or unrecognized ailment in this group. It is a disease of many facets and may present clinically in a variety of ways. In recent years it is encountered more frequently on the medical service than active rheumatic fever, periarteritis nodosa, and similar ailments. Its protean manifestations calls to mind former descriptions of syphilis with involvement of multiple organs and body systems. These points are well illustrated by the following patients.

Case 1. F.A.L., a 42 year old man, was admitted on May 7, 1956, with a 12 year history of recurrent thrombophlebitis. Initially, the left upper extremity was involved. Subsequently, both lower extremities were affected. For the past five years he had been constantly ill, being hospitalized for long periods, receiving anticoagulant therapy with Dicumarol, and having been treated with various antibiotic drugs. He had not been able to work during these five years.

He had smoked 15 cigarettes daily for 25 years. His father died at the age of 45 of coronary occlusion.

Examination revealed a blood pressure of 124/70. There was active thrombophlebitis in the left leg and in the right thigh. Both ulnar arteries were occluded. Pulsation in the right femoral artery was weak and no other arterial pulsations could be detected in the lower extremities.

The blood sugar and serum cholesterol were normal. No vascular calcification was noted on x-ray examination.

He was advised to abstain from tobacco and given Roniacol. In the past year there has been no further thrombophlebitis.

Discussion: On occasions thrombophlebitis may be the only manifestation of thromboangiitis obliterans, and may reveal itself in this way for years. When arterial occlusion develops it may be of minor degree and be clinically asymptomatic. All men with recurrent idiopathic thrombophlebitis should be periodically examined

for evidence of arterial occlusion. Many such patients previously diagnosed as having spontaneous, essential, or idiopathic venous thrombosis have thromboangiitis obliterans.

Case 2. M. F., a 20 year old Jewish college student, was examined October 6, 1952, at Vanderbilt University Hospital. One year previously he had been hospitalized in Chattanooga, Tennessee, because of left chest pain and was found to have a large area of density in the left lower lung field with pleural effusion (Fig. 1). On repeated

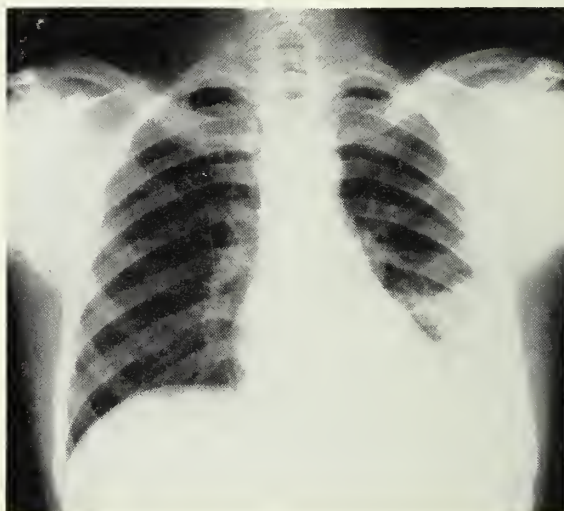


FIG. 1 (Case 2). Pulmonary infarction, left lower lobe. (By permission South, M. J.²)

thoracenteses only 5 to 15 cc. of pleural fluid were obtained. He was then taken to a mid-western clinic. However, the etiology of the effusion was not determined. Six months later he experienced intermittent claudication at the level of the left calf. On the day before admission painful swelling of the left thigh and leg occurred. The patient had been smoking 25 cigarettes daily for 4 years.

Examination revealed changes in the color and temperature of both feet. The left thigh and leg were swollen and warm, with evident phlebitis of the saphenous network. The pulses were absent in the feet. Pulsations of the popliteal artery were diminished. The nails were deeply cyanotic. Oscillometric readings confirmed the reduced arterial pulsations below the level of the knee. The serum cholesterol was 155 mg. per 100 cc. There was no evidence of diabetes. No arterial calcification was visualized on x-ray films.

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He promptly stopped smoking. Treatment with Aureomycin, Priscoline, and bed rest was carried out for 6 days. He then became ambulatory and returned to his classes. In the following four years he has had occasional claudication after running or rapid climbing. There have been no other symptoms. The pulsations in the dorsalis pedis and posterior tibial arteries remain absent.

Discussion: Until the observation of Creech and associates¹ pulmonary embolism and infarction had not been reported early in the course of thromboangiitis obliterans. We have recently had 3 such patients in whom this was the presenting aspect of the disease.² Although thrombophlebitis is present in more than half of the cases of Buerger's disease, embolic phenomena are rarely reported. This low incidence of thromboembolism is attributed to the pathologic findings which include active proliferative reaction in the intima of the veins as well as of the arteries, marked inflammatory changes in the wall of the vessel with the thrombus, and swift penetration of the thrombus by fibroblasts and lymphocytes. Rapid organization of the thrombus occurs, often with obliteration of the lumen of the artery or vein. Supposedly, pulmonary embolism, although infrequent, would more likely occur early before organization and firm fixation of the thrombus to the wall of the vein has taken place.

These patients with Buerger's disease and pulmonary embolism or infarction have been so impressive that we make a careful examination of the arteries as well as the veins of the extremities in every instance of pleurisy and pleural pain.

Case 3. W.F.E., a 34 year old attorney, was admitted to Vanderbilt University Hospital on January 23, 1956, complaining of weakness of the left arm and leg of 10 days duration.

Ten days prior to admission he had the abrupt onset of transient numbness and tingling of the left lower extremity. Within the next few hours there was progressive weakness and incoordination of the left leg so that walking became quite difficult. The following morning he noticed inability to grasp things very well with his left hand. He was admitted to another hospital within twenty-four hours of the onset of this illness, and during the subsequent week slowly improved.

He had smoked 1½ to 2 packages of cigarettes per day during the preceding several months and prior to that time had been smoking at least one package of cigarettes daily for many years. During the previous three or four months he had noted occasional coldness of his left foot. All

episodes of paresthesias and coldness in the left foot occurred while in bed at night. His work during the day was sedentary, requiring very little walking, and he had not had claudication. The heaviest of tobacco consumption occurred while in bed at night; actually he smoked constantly until falling asleep.

Physical examination revealed an obese man with a blood pressure of 120/62. With the Allen test, involvement of both the left dorsalis pedis and left posterior tibial arteries was demonstrated. There was no occlusive lesion in the arteries of the upper extremities. Examination of the heart and lungs was not remarkable. Except for a mild left central type of facial weakness, the cranial nerves were normal. The deep reflexes were increased on the left and a positive Babinski reaction was present on the left side.

In addition to the left hemiparesis, this patient had arterial occlusive lesion in the vessels of the left leg. With evident cerebral vascular disease and peripheral arterial occlusion, in a man 34 years of age, thromboangiitis is a likely diagnosis. Since stopping smoking there have been no paresthesias. The left hemiparesis cleared without residual. Gait is now normal.

Discussion: The incidence of involvement of the cerebral arteries in thromboangiitis obliterans is not known. Hausner and Allen,³ of the Mayo Clinic, found 11 cases of cerebral involvement in a group of 500 patients with Buerger's disease. The most common cerebral symptoms which they encountered were hemianopsia and transient, recurrent, or constant hemiplegia. In 3 of their cases, the cerebral lesions preceded the symptoms of peripheral vascular disease. These patients often present a neurologic syndrome indistinguishable from that caused by an intracranial neoplasm.

This entire subject of cerebral vascular accidents in young normotensive adults has recently been studied by Sproffkin.⁴ When the apoplectic onset of a neurologic disorder occurs in a normotensive patient under the age of forty, the etiologic diagnosis is of great interest to the internist. Former common diagnoses of multiple sclerosis and syphilis are often not tenable. This patient illustrated an unusual etiologic entity in the group of young people with cerebrovascular disease.

Case 4. J.B.B., a 49 year old man, was brought to Vanderbilt University Hospital on September 27, 1955, after having "blacked out."

He had had claudication in both legs for 30 years. Six years previously a left lumbar sympathectomy had been done without benefit. For many years pain and aching was noted in the

upper extremities, usually brought on by lifting heavy objects. Two weeks before admission, while lying in bed, he momentarily lost consciousness. On the day of admission he "blackened out" and fell to the ground.

He had smoked 20 to 30 cigarettes each day for a period of 35 years.

Examination revealed a thin, malnourished man with a blood pressure of 105/60. The left radial artery was barely palpable, the right radial pulsation was strong. Using the Allen test³ the left ulnar artery was shown to be occluded. The left femoral and popliteal arterial pulsations were difficult to detect, whereas all arterial pulsations in the right lower extremity were of good volume. Oscillometric studies demonstrated reduced arterial pulsations in the left thigh and leg. There was no evidence of diabetes mellitus nor was there hypercholesterolemia. Arterial calcification was not found on x-ray studies.

When he stopped smoking the claudication subsided, and there were no further syncopal episodes. Signs of occlusive arterial disease remain.

Discussion: Impaired pulsations or their absence in the radial or ulnar arteries occurs in almost half the patients with thromboangiitis obliterans. Occlusive disease of these arteries is not found in patients with peripheral arteriosclerosis, and is therefore almost pathognomonic of thromboangiitis obliterans. Allen's test for the demonstration of patency of these vessels is easily carried out and should be routinely employed when this disease is suspected. It often affords a quick, simple differential diagnostic point.

Diagnosis

Whether or not tobacco is the etiologic agent of Buerger's disease is uncertain. It is the most important aggravating factor. Reports of the disease in nonsmokers are now more than 20 years past and these reports are not considered reliable. Specifically, this disease can be arrested in the early stages solely by abstinence from tobacco in more than 95 percent of all cases. The recently reported cases in women probably reflects the present prevalence of smoking among women.

Fungus infections and trauma are aggravating factors. Age is important since the onset of Buerger's disease occurs between 20 and 40 years. It is a disease of the arteries, veins and nerves. Often there is generalized involvement of any or all the vessels of the body. Pain is usually the presenting symptom. It may be that of

intermittent claudication or the "rest pain" due to ischemia of tissues, including nerves. As mentioned, thrombophlebitis is frequently a part of the disease and often symptomatically precedes other manifestations.

Actual diagnosis depends on impairment or absence of peripheral arterial pulsations.

Changes in color are prominent. The patient himself usually notes the redness, and later cyanosis when the extremity is dependent. However, equally striking is the marked pallor which occurs on elevation.

Diagnostic points in summary are: (1) age, 20 to 40 years; (2) sex, male; (3) pain, claudication or "rest pain"; (4) absence of arterial pulsation; (5) phlebitis; (6) absence of calcification on X-ray study; and (7) changes in color of the extremities.

Treatment

All patients with thromboangiitis obliterans must abstain totally from the use of tobacco! Physical measures include rest, which is indicated in the presence of ulceration, gangrene, and acute arterial obstruction. The greatest blood supply is maintained with the extremity six inches below the level of the heart. This is accomplished with ease simply by elevating the head of the bed six inches. Rest is continued until the lesion is healed or the acute episode is past. Heat is sometimes valuable in reducing pain and in re-establishing circulation. The most satisfactory method of providing heat is by the use of a light cradle with a temperature of 90 to 95 degrees. The patient wears heavy, loose-fitting stockings. Vascular exercises are at present controversial. Buerger's exercises, Allen's modification of these exercises, and the oscillating bed are not used by us.

Medical treatment incorporates basic principles of management as well as care of the extremities. Foot hygiene is stressed. Fungus infections are treated with great thoroughness. Of the drugs employed, Roniacol tartrate (Roche) shows some promise. Priscoline, although widely used, is of no value in Buerger's disease, but is of some aid in Raynaud's disease. The anticoagulants offer no help. Papaverine has been abandoned by its original advocates.

The trend in surgical treatment is away

from early amputation. Conservative regimens are always indicated. Amputation of more than a digit is rarely needed. Sympathectomy has a limited use in the therapy of Buerger's disease; it is of no benefit for the claudication, though it does elevate the skin temperature. Requirements for surgery on the sympathetic system are: (1) the patient must have stopped smoking, and (2) conservative measures have failed.

Summary

Buerger's disease or thromboangiitis obliterans is a common peripheral vascular disease with a variety of clinical manifestations. Several exemplary cases are cited.

Diagnosis depends on demonstrable impairment or absence of peripheral arterial pulsations. Abstinence from tobacco is ab-

solutely essential to arrest the progress of this disease.

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Congenital Cardiovascular Anomalies in Adults. Johnson, John B., Lawlah, John W., and Hedgepath, L. E. *J.A.M.A.* 165:915, 1957.

The authors of this paper were working in the cardiac clinic of a small hospital, with 60 beds in the department of internal medicine and an average of 100 patients registered in the outpatient cardiac clinic that dealt exclusively with adults.

They point out that many physicians may feel that congenital heart disease in clinical practice is a disorder of infants and children. Too often the physician assumes that in the patient who has been healthy during adolescence and then shows signs of organic heart disease in adult life, the cause must be acquired heart disease. Recent advances in diagnosis have made it apparent that congenital lesions may be more important as the cause of heart disease in adults than was formerly recognized. The authors state that on occasion they have been surprised to find that a clinical diagnosis of rheumatic heart disease with mitral insufficiency in patients under treatment for years in the cardiac clinic has, on further study, proved otherwise.

Certain congenital cardiovascular anomalies, such as patent ductus arteriosus, coarctation of the aorta, and isolated pulmonic stenosis, have quite characteristic signs which are readily detected on physical examination. The authors

found that the roentgenographic configuration of the heart and great vessels provided the most frequent authentic sign of congenital cardiovascular disease in the adult.

The authors found 14 congenital anomalies resulting in shunting of arterialized blood into the right side of the heart, no anomalies resulting in shunting of venous blood into the arterial circulation, 10 anomalies in which there was no abnormal shunting of blood.

Eight of 27 patients with congenital cardiovascular anomalies had interatrial septal defects. All 8 were women and 6 had been through normal labor 2 to 4 times each. The oldest patient was 75 years old and the authors conclude that this isolated lesion in the adult is well tolerated.

The remainder of the 27 cases were made up of patent ductus arteriosus, arteriovenous fistula, anomalous pulmonary drainage, and various congenital valvular deformities.

Detailed studies on several of the patients are presented. The authors point out that although the number of cases is small, it is significant in that the types of congenital anomalies represented are now, in most instances, curable by cardiovascular surgery. They report uneventful correction of interatrial septal defects in two of their patients. (Abstracted for the Middle Tennessee Heart Association by Russell D. Ward, M.D., Nashville.)

Pharmaceutical houses continue to search for more effective antibiotics or combinations of such in the treatment of infections. Though the combination reported here is of interest, many more studies controlled by comparison of the effects of treatment in like cases or in resistant infections are needed before any conclusions can be reached.

ADVANTAGES OF COMBINED TETRACYCLINE-OLEANDOMYCIN THERAPY IN COMMON INFECTIONS*

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There is now evidence from many sources indicating that certain infections may respond more reliably to treatment when antibiotic agents are administered in combination than when only one agent is used. The value of combined therapy has been clearly demonstrated in the treatment of tuberculosis, where the development of resistance to antituberculosis drugs has been greatly reduced by using agents only in combination. Likewise, combinations of antibiotics have been shown to delay or prevent the emergence of resistant strains of other pathogens;¹ in addition, certain combinations have shown enhanced or synergistic activity against specific pathogens both in the laboratory and in clinical infections.²

Materials and Methods

As a practical means for treating infections resistant to any single antibiotic and for protection against progressive bacterial resistance, an antibiotic combination has recently been recommended for general clinical use. This preparation combines tetracycline with oleandomycin, a new antibiotic derived from a strain of *Streptomyces antibioticus*. Clinical studies on this combination have shown it to be extremely safe and effective in the treatment of a variety of bacterial infections.³⁻⁵ Moreover, it has been reported in laboratory studies⁶ that this combination retarded the emergence of antibiotic resistance in certain pathogenic strains, and that it showed synergistic activity as well.

*Signemycin (brand of tetracycline-oleandomycin) was furnished for this study by the Medical Department of Pfizer Laboratories, Brooklyn, New York.

The author gives credit to the Medical Department of Charles Pfizer & Co. for editorial assistance in preparing this article.

Because the possibility of these advantages should prove important in clinical applications, the tetracycline-oleandomycin combination was employed in the treatment of 50 patients with bacterial infections likely to respond to antibiotic therapy. Of these patients 13 were children under 12 years of age. The infections were diagnosed clinically and were considered representative of infections commonly seen in general practice. The diagnoses are listed in the accompanying table.

In all cases the antibiotic combination was given orally in capsules each containing 167 mg. of tetracycline and 83 mg. of oleandomycin. Depending on the severity of the infection, one or two capsules were given every 6 hours until the infection cleared.

Results

The response of the patients is shown in the table. Without exception these patients responded quickly and well to the treatment; there were no therapeutic failures. The therapy was particularly effective in urinary tract infections, as well as suppurative pulmonary infections, including bronchitis and bronchiectasis. No side effects whatever were observed from the therapy in these 50 cases.

It proved unnecessary to continue treatment longer than five days in any case, and all signs of infection disappeared within three days in most of the patients.

The tetracycline-oleandomycin combination was especially valuable in 7 patients who had failed to respond to previous antimicrobial therapy. Penicillin had failed to improve 2 patients with bronchitis and one patient with staphylococcal pharyngitis. Sulfonamides had failed to improve one patient with a urinary tract infection, and

3 other patients had failed to respond to several agents, including sulfonamides, tetracycline, and penicillin and dihydrostreptomycin in combination. All of these refractory infections cleared rapidly and completely under treatment with the tetracycline-oleandomycin combination.

In addition, this therapy was found to be of particular merit in treating patients known to be allergic to penicillin.

Summary and Conclusions

A series of 50 patients with various bacterial infections, some of which were resistant to other antimicrobial therapy, were treated with a combination of tetracycline and oleandomycin.

All of the patients responded quickly and completely to this treatment. There were no therapeutic failures, and no side reac-

tions to these agents occurred in any of the patients. None of the infections became resistant to therapy.

On the basis of these results, this tetracycline-oleandomycin combination was considered to be highly effective in treating infections commonly seen in general practice; it was particularly valuable in infections that did not respond to other antimicrobial agents, and in patients to whom penicillin could not be given.

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RESPONSE OF PATIENTS TO TETRACYCLINE-OLEANDOMYCIN THERAPY

Diagnosis	Number of Patients	Clinical Results		
		Excellent	Good	Poor
Otitis media	11	6	5	—
Suppurative pulmonary infection	11	11	—	—
Urinary-tract infection	8	7	1	—
Pneumonia	6	6	—	—
Acute sinusitis	5	5	—	—
Staphylococcal pharyngitis	4	2	2	—
Soft-tissue infection	2	2	—	—
Diverticulitis	1	1	—	—
Salpingo-oophoritis	1	1	—	—
Fever, undetermined origin	1	1	—	—
TOTAL	50	42	8	0

The not infrequent problem of hemorrhage from the upper gastrointestinal tract involves the close cooperation of medically and surgically trained doctors in the best interests of the patient.

THE MANAGEMENT OF UPPER GASTROINTESTINAL BLEEDING*

TIM J. MANSON, M.D., Chattanooga, Tenn.

In the last decade much has been written about upper gastrointestinal hemorrhage. Chiefly because of advances in surgical techniques and anesthesia, there has arisen a group of hearty champions of early surgical treatment in such cases, whereas there is another, perhaps less vociferous group, that believes gastrointestinal hemorrhage is purely a medical problem. We feel that the proper approach must be an individual one, utilizing the best that has been gleaned from both camps; in this paper I will outline a plan of management that has proved to be a very rational one for me.

From some large hospital centers there have come statements that all patients with massive gastrointestinal bleeding should have early emergency operation. Having seen, in over 20 years of gastroenterologic practice, only one patient die with sudden exsanguinating hemorrhage while being treated medically, I cannot agree that surgery is the method of choice in all cases of massive bleeding. Neither can I feel that we should withhold surgery on properly selected patients, which will be discussed later.

The causes of upper gastrointestinal bleeding have been adequately outlined in the literature. In various series it has been reported that peptic ulcer of the stomach and duodenum and esophageal varices account for 85 per cent of cases of bleeding, and that the addition of gastric neoplasms, jejunal ulcerations and gastritis raise this to 95 per cent. So, for purposes of discussion, only mention will be made of hiatus hernia, diverticula, and the less important causes of bleeding, as the blood dyscrasis, ruptured aneurysms, the Mallory-Weiss syndrome, familial telangiectasia and so forth. Details of treatment will be directed toward ulcerations, varices, and gastritis.

Since one cannot tell, at the onset of bleeding, whether it will be necessary to treat the individual patient medically or surgically, it is good practice, when one serves in a well-staffed hospital, to call in a surgeon immediately who will follow the case with you from the outset. It goes without saying that where such facilities are locally available, all bleeding patients should be admitted to a hospital, rather than temporizing by treating them first in the home.

Study of the Patient

Every attempt should be made to obtain an early history, from the patient if he is able to give it, or if not from one of the family. One should determine whether or not the patient has had a typical history of ulcer pain or distress, or whether he has had a nonrhythmic type of pain, and whether or not he has had symptomatic relief from food or alkalis. One should elicit symptoms of previous jaundice or hemorrhage, whether there has been anorexia and weight loss, dysphagia, or a history of alcoholism or dietary deficiencies.

Careful physical examination should be done as soon as possible, but may be disheartening, due to a paucity of findings, except in some cases of cirrhosis. Jaundice and ascites may be readily apparent, but hepatosplenomegaly, spider telangiectases, and evidences of collateral circulation or a protruding umbilicus may be impossible to find in a patient bleeding severely. Heavy abdominal palpation must be avoided, but tenderness and masses should be looked for. One should be alert for signs of nutritional deficiency such as glossitis or rhagades; the mucous membranes and skin should be searched for evidences of bleeding. Peripheral edema should always be looked for, and rectal examination must never be omitted, for thus may one feel masses or a Blümler's shelf, and may observe the presence of blood on the examining finger.

*Read at the meeting of the Tennessee State Medical Association, April 9, 1957, Nashville, Tenn.

Upon admission, the following laboratory studies are immediately ordered: blood typing, Rh and cross-matching, complete blood count and hematocrit, (these to be repeated every 4 to 8 hours), prothrombin time, NPN, stool examination and urinalysis. The bromsulphthalein test is routinely done in all nonjaundiced individuals as the single best screening test for liver disease, and if the latter is strongly suspected, further studies, such as the thymol turbidity or cephalin flocculation, serum bilirubin, serum protein with albumin-globulin ratio, urine bilirubin and urobilinogen are done. If the BSP retention is greater than 15 per cent in 45 minutes it is presumptive evidence of liver disease. A normal BSP would eliminate the possibility that bleeding varices could be on the basis of cirrhosis of the liver, but it should be pointed out that 10 per cent of esophageal varices occur in types of extrahepatic portal hypertension, such as Banti's syndrome or congenital varices. Such cases are not potentially as serious fortunately, because of the absence of concomitant liver disease. One should also always keep in mind that frequently multiple lesions occur in the gastrointestinal tract, each capable of causing bleeding. Palmer and Brick¹ have found that 39 per cent of patients with esophageal varices had one or more of such lesions. If blood dyscrasias are suspected, a platelet count, bleeding and clotting times, and other applicable studies are ordered. In this manner one can very quickly have available the important diagnostic laboratory studies to help one in diagnosis. Further, more detailed laboratory tests can be done later when indicated.

For many years, conservatism has told us that X-ray diagnostic work should be postponed until bleeding has stopped and the patient has been stabilized, to be done perhaps 10-14 days later. Through the excellent work of Hampton,² Schatzki,³ and Zamcheck and collaborators,⁴ however, we now feel that careful roentgen studies can be made as soon as the patient is out of shock. Again one must emphasize the importance of cooperation within the "team." The radiologist should be aware of the fact that the patient is bleeding and that he must not

be handled in the least in a routine manner. Preferably the physician should accompany the patient to the X-ray room, so he may be able to detect and rectify any recurrent bleeding or shock. Adequate supplies of matched blood should be on hand.

By observing such precautions, these patients can usually be studied safely by X-ray within 24 hours after their admission to the hospital, although examination may necessarily have to be postponed due to shock, signs of active bleeding or inability of the patient to cooperate in the study. Even though it is felt that pressure methods should not be used, or that the patient should not stand, incomplete studies are still worthwhile. It has been proved that shallow peptic ulcerations may heal very quickly, within seven to ten days, and would be missed with delayed studies, and that early X-ray examination will reduce materially the number of cases of "bleeding of unknown origin."

One must not hesitate also, when necessary, to perform emergency esophagoscopies or gastroscopies, as in skilled hands, these instruments may be passed without undue trauma. Sometimes such emergency procedures can be performed at the patient's bedside more safely than moving him to the X-ray department and subjecting him to the roentgen routine. Varices are quickly and easily seen through the esophagoscope, while gastroscopy may reveal gastritis, superficial peptic ulcerations, gastric polyps, and other lesions difficult or impossible to find thru X-ray studies alone.

Treatment

Management of gastrointestinal bleeding should be energetic and prompt. Early recognition of the emergency is basic, but often the bleeding is obscure at first. Weakness may be of gradual progress, and may proceed slowly and undramatically, or the patient may vomit large amounts of fresh blood or coffee ground vomitus, or pass a tarry or frankly bloody stool, or both. The patient first seen after massive bleeding, is pale, perhaps slightly cyanotic or dyspneic, and may be covered with beads of cold sweat. Impending shock may make him restless, and the pulse is rapid, usually 120 per minute or more. The systolic blood

pressure is lowered, often to 90 or less.

In general it can be stated that hematemesis is more indicative of a massive upper gastrointestinal hemorrhage than is melena, although in extreme bleeding large, frankly bloody stools may be passed. If hematemesis is not present one must think of conditions lower in the gastrointestinal tract.

Whether in frank shock upon admission or not, we feel it wise to immediately start an intravenous glucose in saline infusion, both to restore blood volume, and also to have an intravenous needle in place, should massive exsanguinating hemorrhage begin. This precaution may save valuable time later, were this catastrophe to happen.

For years it has been taught that transfusion should be withheld for fear that increasing the blood pressure would "blow off" a not-too-well-formed clot. Better substantiated studies now tell us there is much greater danger to the system if we allow blood volume to fall drastically. With this in mind, if the first blood work shows a hematocrit of below 30 per cent, a hemoglobin of below 8 Gm., or a red cell count of less than 3 million, transfusion of whole blood is started. Warthin and associates⁵ have shown that bleeding of this magnitude will require at least 1000 cc. of blood. The hemoglobin is held to more than 10 Gm., and the red count more than 3,500,000 if at all possible. We would like to have available for use 3,000 to 4,000 cc. of blood in each bleeding emergency. Usually adequate replacement of blood is all that is necessary to combat shock, but upon occasion some of the vasopressor drugs may be added.

Through these various tests and procedures, having come to the most accurate diagnosis possible, and the patient being out of shock, there must next come a decision as to which of these patients should be treated medically and which surgically. All investigators feel that for optimum low mortality this decision should be reached within the first 48 hours. Particularly during this interval one must distinguish between bleeding from cirrhosis and other causes, never forgetting that likelihood of multiple lesions. After the initial 48 hours, the

surgical mortality, particularly in the older age group above 50 years, is apt to become prohibitive. It must be stated at this point, however, that in 75 per cent of cases of massive bleeding recovery will take place with conservative management and adequate blood replacement.

Zamcheck,⁶ Dunphy and Hoerr,⁷ and others have outlined the criteria which they observe in such a selection, and although it must be admitted that they are completely arbitrary, yet they are based on good clinical judgment, and by following them our experience has proved them sound.

Procrastination in older patients is likely to be very serious, since the mortality in patients over 50 with massive hemorrhage, is much higher when they are treated medically than with early surgery. Crohn,⁸ in his analysis of 2,875 cases, draws the obvious conclusion that in this age group a surgical approach must be accepted earlier, for if operation is unduly delayed one may expect a mortality perhaps as high as 40 per cent. Gastrectomy within the first 48 hours is tolerated much better in this age group than is expectant treatment.

One recognizes that certain lesions carry with them a graver prognosis. For example, bleeding from the upper stomach and esophagus is less amenable to surgery than that from the distal stomach or duodenal cap. Post-bulbar ulcerations are more dangerous because they frequently involve the inferior duodenopancreatic artery, and operation should therefore be accepted earlier.

The rate of bleeding and response to medical treatment and transfusion must be evaluated. Surgical treatment must be chosen as the therapeutic method of choice in exsanguinating hemorrhage, for it has been shown that spontaneous cessation of bleeding is unlikely when a total of more than 2500 cc. of blood is required to maintain the acceptable blood levels, or when over 1500 cc. is required in 24 hours to maintain proper hematocrit levels.

Surgical treatment, too, is preferred to medical treatment when there is recurrent bleeding while the patient is still under hospital treatment, or when there are also signs of perforation or obstruction. Gen-

erally, ulcer pain occurring while the patient is actively bleeding, would suggest penetration of the ulcer into the pancreas, and usually makes one turn to surgical management.

There is one clinical sign that perhaps is of greater prognostic importance than any laboratory data, namely repeated attacks of syncope. These usually indicate nonstabilized hemorrhage, and lead more quickly to surgical intervention.

If operation be decided upon, in capable hands subtotal gastrectomy is conceded to be the surgical procedure of choice in the treatment of bleeding ulcers. When possible the ulcer should be removed, although this is not always feasible. In my opinion, vagotomy and posterior gastroenterostomy is not an acceptable procedure. There will inevitably be a small number of cases in which a definite or a correct diagnosis has not been made preoperatively. In such instances a wide gastroduodenotomy may be done, and often a small otherwise undetected lesion may be found. If no source of bleeding is seen, unsatisfactory though this may seem, a "blind" gastric resection should be performed, for it has been shown to be curative in most instances. In a few cases it may be better to temporarily suture the ulcerated area, perform an exclusion operation, and be willing to return later for more definitive surgery.

Let us state emphatically that surgical therapy should be considered only when conditions are right. This is often desperate, emergency work, and should be undertaken only where there is a well-trained surgical team, a well-equipped hospital, and an ample blood supply. If these criteria cannot be met, operation will be attended by such a high mortality that conservative medical management is much the better choice.

In managing a bleeding peptic ulcer medically, adequate sedation is important, preferably with barbiturates. Morphine must be avoided, both because of danger in its use in liver disease, and because its use is accompanied by increased motor activity of the gut. Pain can best be controlled by the use of antispasmodics, hourly feedings and antacids.

We administer hourly feedings of milk and cream, whole milk, or cereal gruels as soon as active nausea is controlled, as there is ample evidence now in the literature, showing better buffering of acid, and better protein levels when early feeding schedules are used. It has not seemed logical to us to serve a Mulengracht diet to a patient with an acute ulcer complicated by bleeding, when we would not use such foods in an ordinary uncomplicated peptic ulcer so early in the course of treatment. Any feedings, of course, must be withheld for 8 to 12 hours prior to any contemplated gastrointestinal roentgen studies.

Twenty-four hour control of hyperchlorhydria is essential. In our enthusiasm for the modern drugs of the aluminum hydroxide-magnesium trisilicate group, we often overlook the high incidence of serious fecal impactions when they are used during massive bleeding. For that reason, while patients are actively bleeding, the drug of choice for us has been the older Sippy powders, or more frequently, tribasic calcium phosphate, since large amounts of this powder can be given without appreciable danger of alkalosis.

Chlorpromazine has proved most effective in the control of nausea, and its short term use seems definitely indicated until active vomiting has ceased. As a rule we prefer one of the anticholinergic drugs to the atropine group, bearing in mind, however, that Gunn and Allen⁹ have reported several cases of paralytic ileus while using Banthine or Pro-banthine in bleeding ulcers.

Gastritis, in general, is handled medically in a similar manner.

Should one feel confident that he is dealing with bleeding from varices, early esophageal tamponade should be instituted. Although several types of balloons have been devised, for us the Sengstaken-Blake-more¹⁰ double-balloon has been most useful for both therapy and diagnosis, for if bleeding ceases upon inflation of the balloon, and recurs when the pressure is released, one can feel happier in his diagnosis. Intubation seems to be well tolerated for 48 to 72 hours, and even after deflation, until one is confident that bleeding will not recur, the tube is best left in position.

Early operation in bleeding varices is attended by a very high mortality rate, so, after intubation, a vigorous medical regimen is instituted. By this means one can rapidly lessen the fat in the liver, secondarily lessening intrahepatic and portal vein pressures. Particularly we stress the ingestion of proteins, methionine and choline, and give supplemental amino acid preparations and glucose intravenously. Since, either with or without alcoholism, cirrhosis is usually accompanied by a high degree of vitamin deficiency, we feel that crude liver extract should be given daily, intramuscularly. Ascorbic acid is also given orally in doses of from 500-1000 mg. daily, and vitamin K is used to correct any prothrombin deficiencies.

This type of medical management, combined with successful tamponade, often will result in cessation of bleeding, or at least give one a few days grace, during which the patient may be raised to a much better nutritional state in preparation for a shunt operation. This will noticeably lower the surgical mortality to at least acceptable levels.

Welch¹¹ and his co-workers have recently shown that coma, in cirrhotic patients bleeding from varices, is probably caused by the absorption of large amounts of digested blood from the intestine causing high blood levels of ammonia nitrogen. They now administer purgatives through the tamponade tube, and frequent enemas, to rapidly cleanse the intestinal tract of blood, and report definitely better results. Further experience will probably prove this to be an important addition to our therapy.

Summary

Briefly, we have outlined what seems to us to be a workable approach to the management of the chief causes of upper gastrointestinal hemorrhage. It is only with careful study and close cooperation between internist and surgeon that we can manage each individual case and so to lessen the mortality from this condition.

Discussion

DR. WILLIAM CARD (Nashville): We are indebted to Dr. Manson for his excellent presentation of a difficult subject, one which oftentimes engenders controversy, especially with regard to

treatment. I should like to emphasize several points.

The first and perhaps the most important step is the selection of a surgical consultant who will see the patient initially and throughout the period of active treatment. Patients with bleeding gastrointestinal lesions may die from excessive bleeding thereby making absolutely necessary the attendance of a surgeon who is aware of the patient's condition as it develops.

Since Schatzki and his group began advocating early X-ray examination of bleeders it has become possible to make decisions earlier with respect to surgical intervention and to determine the site of bleeding which is often missed by waiting 7 to 10 days. Due regard must be given always when hemorrhage and shock accompany one another.

With respect to bleeding sites it is generally considered advisable to operate on those with saddle ulcers, since they always bleed profusely and almost always recur.

The possible existence of more than one lesion in the gastrointestinal tract is extremely important to remember. The presence of intractable or recurring shock should always bring this possibility to mind.

While we are dealing with the matter of shock it should be pointed out that with elevation of the NPN one must consider that at some time in the recent past shock existed for a period of time. It has been shown that absorption of blood from the gastrointestinal tract in large amounts is not followed by elevation of the NPN if there has been normal kidney function; only if there is diminished kidney function due either to pre-existing renal disease or to shock will there be elevation of the NPN.

All of us are aware of the fact that in uremic states gastritis and bleeding ulcers will appear.

I should like to mention one procedure which is being used more frequently now and which I have had occasion to observe in two instances; that is the replacement of blood loss by intra-arterial transfusion. With this method blood can be given rapidly and in large amounts without as much concern to the production of pulmonary edema and overloading of the circulation. The patient's response is often quite dramatic.

The procedure of "blind" gastric resection has been mentioned. Before this seemingly unsatisfactory operation is done, a wide gastroduodenotomy should be done. In the hands of certain of our surgical colleagues "blind" gastric resection has been most satisfactory in controlling gastrointestinal hemorrhage of undetermined site. This bears out what several authorities contend, namely, that about 90 percent of bleeders with undetermined sites of hemorrhage are undoubtedly bleeding from their stomachs.

I would not be fair to myself or to certain of my colleagues if I failed to mention the role of our national addiction and its part in the treatment regimen. Smoking should be curtailed or

stopped in all instances. I am sure there are those of us who have been impressed repeatedly with the observation that ulcer activity recurs with great frequency in those who take up the habit again.

I wish to thank Dr. Manson once more for this excellent paper.

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Multifocal Osteogenic Sarcoma. Price, C. H. G. and Truscott, D. E.: *Penzance, England, J. Bone & Joint Surg.* 39-B: 524, 1957.

One case in which the patient presented exhibited tumors in the sternum, right first rib, thoracic and lumbar vertebrae, sacrum, both innominate bones, right humerus, both femora, and in the right parietal and occipital bones. These tumors were all histologically compatible with the diagnosis of osteogenic sarcoma. There was no evidence of pulmonary neoplasm and the author feels that this represents a multifocal osteogenic sarcoma. Such a tumor is frequently seen complicating Paget's disease but is extremely rarely noted otherwise. The author considers that the study of the several tumors together with the history, radiographs, and post mortem findings indicates multifocal skeletal primary tumors rather than osseous metastases. (Abstracted by Thomas F. Parrish, M.D., Nashville.)

Monocular paralytic mydriasis is always of significance and deserves careful diagnostic attention in terms of future developments.

MONOCULAR INTERNAL OPHTHALMOPLEGIA: Three Case Reports*

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The case histories of three patients with monocular internal ophthalmoplegia are presented. The noticeable signs and symptoms allowed the location of the individual lesion at specific levels of the peripheral and central nervous system.

Case 1. Mr. J. L., 25 years old, was seen for the first time in April, 1956. He gave the history of poor vision in his left eye all his life. His right eye had always had good vision until a few weeks before when he noticed a mild blurring, especially in bright light. At about the same time his family observed a dilatation of his right pupil.

His left eye showed no abnormalities and the pupillary responses to light and accommodation were entirely normal. The pupillary diameter equalled 3 mm. With $-3.00 = -1.00 \times 10$ he saw 20/50 and Jaeger 3. The right eye was essentially normal with exception of the pupil which was 6 mm. wide and did not react to light (directly and consensually). In the dark room the pupil dilated slowly; after prolonged exposure to light it contracted sluggishly to 4.5 mm. The accommodation-convergence reaction was spastic but finally the right pupil seemed to be smaller than the left. The vision in the right eye equalled 20/20 with $+ .37 \times 90$, and the p.p.a. = 12 cm. The central and peripheral fields and the intra-ocular tension were normal. Two drops of 1/1000 adrenaline did not change the size of the pupil; 1% pilocarpine contracted the pupil to 4 mm. with pronounced ciliary spasm; 2.5% mecholyl narrowed the right pupil from 6 mm to 3.5 mm in 30 minutes, but did not change the size of the left pupil.

The physical examination (Dr. Morris Paster-nack) was negative. The neurologic consultant (Dr. G. M. Lasater) confirmed the diagnosis of Adie's myotonic pupil. There was no absence of either knee-jerk or other tendon reflexes as is usually found simultaneously with the characteristic pupillary disturbance.

During the following months an increasing recession of the near point of accommodation and a pronounced slowness in the relaxation of the ciliary muscle after close work occurred. In May, 1956, the range of accommodation was scarcely 1 D. and bifocals had to be prescribed.

He was not seen again until February 15, 1957. At this time he gave the information that early

in December, 1956, he noticed that he again could read without bifocals. The examination at this time confirmed a range of accommodation normal for his age and was otherwise identical with his first examination in April, 1956. The neurologic findings also were unchanged. (Dr. Lasater).

Comment: The simultaneous occurrence of monocular pupillary rigidity to light, tonic reaction to convergence-accommodation and absence of knee and ankle jerks was re-evaluated by Adie in 1931 as a unique syndrome in otherwise healthy people. This should be differentiated from syphilis of the central nervous system, juvenile tabes and paralysis, multiple sclerosis, encephalitis and other diseases of the nervous system. Adie located the lesion in the vegetative part of the III nerve. The mecholyl test, as published by Scheie,¹ in 1940, is of essential differential diagnostic and localizing importance in most cases. It is known that if a nerve supply is interrupted postganglionically and the nerves allowed to degenerate, the effector cell becomes sensitized to the substance formerly liberated by the nerve endings and responds to smaller amounts of acetylcholine. This suggests the location of the lesion affecting the parasympathetic pathway to the iris at the ciliary ganglion or peripherally to it. The denervation apparently is only partial as the sphincter responds to physostigmine which only acts on intact nerve endings. The tonic reaction to other pupillary reflexes might be referred to the slow diffusion of acetylcholine liberated by the few functioning parasympathetic fibers through a sensitized sphincter muscle. This hypothesis however has no explanation for the absence of the tendon reflexes.

Case 2. Mrs. T. H., 32 years old, was referred by Dr. J. W. Webb of Jonesboro, Arkansas, because of a complete right internal ophthalmoplegia which occurred suddenly 2 months previously, following excruciating headaches of several hours duration.

The physical examination and dental survey were done in her home town and were negative. When she was seen for the first time in August, 1955 the examination of the eyes was essentially

*Read at the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 9, 1957, Nashville, Tenn.

normal with exception of the right pupil, which measured 5.5 mm. and did not react directly or consensually to light. The vision in her left eye equalled 20/20; p.p.a. = 14 cm. With her right eye she saw 20/20 but needed +4.00 to see Jaeger 1 at 25 cm. Her central and visual fields were normal and the intra-ocular tension equalled 15 mm Hg. in both eyes.

She was referred to Dr. Robert Raskind. Angiographic studies revealed an aneurysmal sac arising at the junction of the internal carotid and anterior and middle cerebral groups on the right side. The injection of the left carotid was negative. Arterial pressure in the internal carotid artery in the neck could be reduced roughly 35 per cent by the application of a temporary ligature. The common carotid artery in the neck was then occluded completely with a metal clamp. Postoperatively the patient did well and did not develop any neurologic disturbances following the ligation.

Comment: The III nerve because of its close relationship to the basal vessels, is easily traumatized by diseases of the posterior cerebral, posterior communicating and superior cerebellar artery during its course through the tentorial gap towards the roof of the cavernous sinus, also by the internal carotid during its short intracranial course at and after its bifurcation. The pupilloconstrictor fibers are concentrated over the superior arc of the nerve from the midbrain to the cavernous sinus and may be injured by comparatively mild pressure. Similar localized injury to the III nerve may be caused by a swelling of the uncus region of the temporal lobe over the tentorial margin.

Case 3. Mrs. T. A., 22 years old, was seen only once in September, 1956. She seemed to be under considerable psychologic stress, complained bitterly of general weakness, nervousness and impairment of vision.

Examination of the external eye was normal except for dilatation of the left pupil which did not react directly or consensually to light. The disk margins seemed mildly blurred. Her corrected vision equalled, o.d. 20/25 and Jaeger 1, at 14 cm. p.p. With her left eye she saw with correction 20/25 and Jaeger 20; with +5.00 she saw Jaeger 1 at 20 cm. The peripheral fields were normal but she had apparently an enlargement of the blind spot in both eyes (target $\frac{1}{2}$ /1000). The intra-ocular tension was normal. She did follow the light in all directions. The voluntary elevation however was hesitant and incomplete.

She was sent to Dr. Robert Raskind for consultation. Her neurologic findings were as follows: slight tremor on finger to nose test bilaterally, with general hyper-reflexia and absence of superficial abdominal reflexes. X-ray film of the skull

were negative; E.E.G. was diffusely abnormal but showed no lateralization or localization. Pneumoencephalography was advised but refused. The patient has not been heard from since. The tentative diagnosis was disseminated sclerosis.

Comment: The widely dilated pupil with ipsilateral abolition of direct and consensual light reactions and retention of both reactions contralaterally might localize the lesion between the decussation and the constrictor center or at the Edinger-Westphal nucleus. The dissociation of voluntary elevation and the fixation reflexes also suggests extensive supranuclear implications. Injury to the efferent paths of the III nerve after its exit from the mesencephalon and exposure to ipsilateral increased supratentorial pressure could as well cause a monocular paralytic mydriasis. It is very unfortunate, indeed, that the patient was unwilling to cooperate and therefore prevented a full evaluation of the pathologic process.

Discussion

Monocular paralytic mydriasis always is of considerable clinical interest. The basic forces of pupillary activity, the innervation and relaxation of parasympathetic and sympathetic forces and their integration at specific levels of the pupillary pathway through the central and peripheral nervous system have been widely investigated during recent years. (Pupillography.²) Considerable strides have been made in the understanding not only of the anatomy and physiology of those areas but also in the interpretation of this syndrome of (unilateral paralytic mydriasis) which might be caused by destructive, inflammatory vascular and degenerative lesions of various origins.

Summary

Three case histories of patients with monocular paralytic mydriasis were reviewed. The etiology of monocular paralytic mydriasis as referred to the particular case was shortly discussed.

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CASE REPORT

Tetanus of Otogenic Origin*

Herbert Duncan, M.D., Nashville, Tenn.

Tetanus due to otogenic origin is of a rare occurrence and when it does occur is seldom suspected. A search of the literature for the past thirty years revealed only three such reports.

Bower¹ reported a four year old boy who developed trismus and generalized convulsions after one week of otitis media with drainage. There was no history of previous injury. At admission he was unable to open his mouth. He received tetanus antitoxin intravenously and cisternally as well as sedatives, but expired from cardiac and respiratory failure. *Clostridium tetani* was grown from the drainage from the ear.

The second report appeared in 1940 by Blaquiere² who reported a case in a 28 year old woman who recovered.

The third report, in 1940, was that of a four and a half year old boy who had a draining ear and no previous injury.³ He was treated for a week for his otitis media before the tetanus was recognized, having developed convulsions and trismus. Recovery occurred after receiving tetanus antitoxin, sedatives and a simple mastoidectomy.

The mode of infection by tetanus from the ear was not discovered in any of the above cases.

In the case I am to report, there also was no history of any previous injury, and a careful search of the entire body revealed no recent wounds or scars. The only clue was that the aunt did irrigate the ear with water to clean out the drainage.

This child was an orphan and her school records could not be located, so the status of her previous immunizations could not be determined accurately. However, since it has been the custom to give combined immunization against diphtheria, pertussis and tetanus to all school children, it can be assumed that she had received tetanus toxoid.

*Read before the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 8, 1957, Nashville, Tenn.

Nevertheless in diseases against which immunization is used, we know that an overwhelming infection may overcome the protection of the vaccines. But most of the cases in immunized persons will be milder than in the unimmunized person and thus may be very difficult to diagnose.

This might account for the mild symptoms initially in my case.

Case Report

F. B., a 13 year old white girl, lived with her aunt and uncle. There were six other children in the family.

The patient was first seen by me on October 25, 1956, having been referred by a pediatrician who had been treating her for the previous 10 days.

On October 15, she had developed severe earache on the right. The next day the ear began to drain and she had less pain. She received penicillin injections daily for the next 4 days, without improvement.

On October 19 she developed difficulty in opening her mouth and had trouble in swallowing. Penicillin was stopped and she was given Ilotycin orally. The pain had almost disappeared and she had no elevation of temperature. The ear continued to drain and the child looked sick.

X-ray studies of the mastoids were made on October 25; acute mastoiditis was diagnosed on the right side. She was then referred to me.

At my examination I found that she had a fairly severe trismus but could open her mouth wide enough to inspect the throat and to see that it was normal.

The patient complained of chilliness, but there was very little fever. There seemed to be some stiffness of the neck but no pain upon motion of the head. The child was bright and alert but looked ill.

The positive findings were confined to the right ear. There was some impairment of hearing in the right ear. Tenderness to pressure was present over the right mastoid region. A thick, purulent, odorless drainage filled the external canal. When this was cleaned out, there was some sagging of the bony canal. There was a pulsating perforation in the anterior-superior quadrant of the drum with some bulging. She was admitted to the Baptist Hospital that afternoon.

Consultation over the phone with one of our neurosurgeons gave me the first hint of tetanus. I could not imagine an intra-cranial complication that would cause trismus. He suggested that a low grade tetanus infection would give the picture of my patient. I suggested this to the pediatrician but he did not believe the diagnosis.

Laboratory studies were essentially normal on admission, except for white count of 10,000.

Operation. A simple mastoidectomy was done

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

Making Reservations for Annual Meeting?

● All persons desiring hotel reservations for the annual meeting in Gatlinburg, April 20-23, 1958 should write as follows: Housing Bureau, Tennessee State Medical Association, P. O. Box #208, Gatlinburg, Tennessee. A \$10.00 deposit is necessary for confirmation of your reservation request.

Board of Trustees Meeting in Nashville October 13th

● The TSMA Board of Trustees conducted its semi-annual meeting in Nashville on October 13th. An unusually long session was held due to the great amount of business transacted.

Executive Committee Action Approved

● A considerable amount of business previously acted upon by the Executive Committee was officially approved by the Board. These included: (1) Confirmation of extending the VA Hometown Care Contract until June 30, 1958. (2) Approval of necessary funds to conduct the second county medical society officers conference, February 23, 1958. (3) Approved the purchase of premises liability insurance on the headquarters office building in Nashville. (4) Approved expenditure of the printing and distribution to members of the new version of the Code of Medical Ethics. (5) Approved recommendations of the Executive Committee as transmitted to the Director of the Southern Regional Education Board relative to optometrists. (6) Adopted action to send a delegate to the Sixth National Conference on Physicians and Schools, sponsored by the AMA and conducted at Highland Park, Illinois. (7) Approved action of the President in obtaining Dr. Kenneth McFarland, Educational Consultant for the American Trucking Association, as guest speaker for the President's Night Banquet at the annual meeting in 1958. (8) Approved and appointed a Liaison Committee to the Tennessee Office of Social Security Administration. This matter was a request from the AMA and deals with Public Law 880 and certification of disability for patients under the Social Security program. Dr. James C. Gardner, Nashville; Dr. R. B. Wood, Knoxville and Dr. H. L. Monroe, Erwin; were named to compose a Medical Advisory Committee to the Bureau of Old Age and Social Insurance. (9) Approved officially the TSMA policy on asiatic flu. (policy published in September issue of TSMA Journal).

New Business Acted Upon by the Board of Trustees

● (1) The Board heard a report by Dr. Frank Luton, Chairman of the Study Committee on the Legal Definition of Medicine and Medical Practice. He reviewed the controversy relative to the Psychology law in Tennessee, and the outcome of a hearing before the Legislative Council and fully advised the Board on the status of this matter. The Board recommended that the Committee proceed with its work. It was further the concensus of opinion that in order to establish a permanent pattern, all persons practicing treatment of the body should be required to pass the basic science law in order to practice under any phase of the healing arts. The Committee

will continue its work and report to the Executive Committee of the Board.

(2) Financial operating statements of TSMA and the budget for 1958 were approved. (3) Upon legal advice of TSMA attorney, Mr. Charles L. Cornelius, Sr., the Board approved the purchase of Workmen's Compensation covering TSMA employees.

Revised VA Hometown Care Fee Schedule

● (4) Upon recommendation of the Committee on Governmental Medical Services, the revised VA fee schedule as recommended by the Committee, was adopted by the Board. The revised schedule showed an elevation in the fee schedule. The Board recommended its adoption and effectiveness at the earliest possible date that could be worked out with the Veterans Administration.

(5) The Board heard a report and approved the official program of the County Medical Society Officers Conference to be conducted in Nashville on February 23, 1958. (6) Approved a report from the Executive Secretary on plans and arrangements already completed for the 1958 annual meeting to be held in Gatlinburg. (7) Dr. R. H. Kampmeier, Editor of the Journal, reported upon the recent journal survey. He stated the difficulty encountered in securing scientific copy for presentation in the Journal, together with the difficulty in publishing a balanced journal equally divided between advertising and scientific copy.

Report From the Tennessee Medical Foundation

● The Board heard a report from the President of the Tennessee Medical Foundation, Dr. Roy McDonald, and from Dr. Daugh W. Smith, Secretary-Treasurer. Workings of the Foundation and problems that it is confronting, were reported. The request was made of the Board to give the Foundation a vote of confidence together with encouragement and assistance in a membership program. (9) The Board, at the request of Dr. Kampmeier, recommended that Dr. Chas. C. Trabue again serve as delegate to the House of Delegates of the AMA for the interim session in December.

A number of other administrative and policy matters were acted upon.

Prepaid Insurance Committee Recommendations Sent to County Society Officers and TSMA Delegates

● The Prepaid Insurance Committee's recommendation for the Tennessee Plan has been forwarded to Presidents and Secretaries of all county medical societies and to delegates to the House of Delegates of TSMA. County societies are urged to consider this matter and instruct their delegates on action to be taken. A special meeting of the House of Delegates will be called at an early date to consider the question.

Changes at AMA

● Dr. George F. Lull will relinquish the job of General Manager of AMA next January to become Assistant to the President. He will continue as Secretary until June. The new General Manager will be Dr. F. J. L. Blasingame, Wharton, Texas, now an AMA Trustee.

Doctors' Fees Below Other Health Costs

● A report in the monthly Labor Review by the Bureau of Labor Statistics shows that in the past 20 years, hospital costs have risen sharply in contrast to physicians' fees. The report states that during 20 years from 1936-1956 when the price index rapidly increased, general practitioners' fees rose only 72.8% and surgeons' fees 59.5%. Dentists' fees increased 82.1%. Hospital room rates rose 264.8%. In the same period, medical care costs generally have lagged behind costs for food, personal care other than medical and clothing. The report showed that health services generally went up less than food and other personal services.

Public Service

THE TENNESSEE TEN

Public Service Committee Adopts New Programs

● A four-point activity program on the state level was adopted by the Public Service Committee at a meeting October 27 in Nashville. In addition, the committee also endorsed four other programs for implementation by county medical societies. The four state-wide projects are:

1. Establishment of poison control centers in selected cities throughout Tennessee. Facilities of such centers would be available to doctors in surrounding counties. Dr. John D. Hughes, Memphis, committee member, was appointed to determine the number and location of the centers. Memphis and Knoxville already have poison control centers in operation, and Nashville has one in the planning stage.

2. Backing of a state-wide medical examiner law. The law, already passed as private acts for Davidson and Shelby Counties, requires medical examinations in all cases of death not attended by a physician.

3. A study of the nurses shortage in Tennessee and a program to alleviate the shortage. The study will attempt to determine what steps are currently being taken to help solve this problem.

4. A program to assist in the improvement of nursing homes.

The four programs which the Committee endorsed for implementation by local medical societies are:

● 1. A continuing program of health education to the public through newspaper columns written by local doctors. It was pointed out that the lay public is always eager for this type of information, and it is especially well received when it appears regularly in a local newspaper, written by a local doctor.

2. Discussion meetings between doctors and small groups of selected community lay leaders. This program has been successfully carried out in Iowa, with resulting up-grading in medical services for the community, along with improved public relations. It gives doctors an opportunity to hear frank appraisals of how they can better serve the community.

3. Co-sponsorship of chronic disease clinics with voluntary and official health agencies.

4. Promotion of community health forums as an adjunct to the society's health education program.

● The Public Service Committee also voted to assist the Tennessee Department of Public Welfare in obtaining the services of doctors now serving on the screening committees of counties participating in the Hospital Program for the indigent to act as Medical Review Officers for that phase of the program to be administered by the Welfare Department. In a letter to the doctors, Dr. A. B. Scoville, Jr., Committee Chairman, called attention to the fact that the phase of the program to be administered by Welfare is an integral part of the overall plan for hospital care of Tennessee's indigent.

County Society Projects Urged

Doctors Requested To Serve as Medical Review Officers

**Committee Approves
Press Code**

● The Committee also approved, with minor changes, a draft of a state-wide Physician, Hospital, News Media Guide to Cooperation. When the Guide had been approved by the Tennessee Hospital Association, Tennessee Press Association, and Tennessee Association of Broadcasters, whose representatives helped draft it, copies will be distributed to all interested parties throughout the state.

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**Conference to
Highlight Medical-
Public Relations**

● Great emphasis will be placed on the importance of good public relations between the medical societies and the community at the Tennessee State and County Medical Society Officers Conference in Nashville, February 23. One-third of the program will be devoted to public relation aspects, with Leo Brown, Public Relations Director of AMA, and Loye Miller, Editor, the Knoxville News-Sentinel, scheduled to address the conferees. Mr. Miller's subject, "Teamwork Between the County Medical Society and the Press," will be underscored by his presentation of a check for \$300 and a plaque to the winner of the Second Annual Tennessee Medical Press Award. Other program speakers include Charles B. Shuman, President, American Farm Bureau Federation; Dr. Percy E. Hopkins, Chairman, AMA Committee on Prepaid Insurance Plans; Dr. Thomas Alphin, Director, AMA Washington Office; and Col. Earl Lowery, Director of the Medicare Program.

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**Dr. Ruilmann Addresses
Robertson County
Health Council**

● Dr. C. J. Ruilmann, Tennessee Commissioner of Mental Health, was the featured speaker at the October meeting of the Robertson County Health Council in Springfield. Dr. Ruilmann called the Council's attention to the plight of many of Tennessee's aged, and cited their situation as posing one of the state's major health problems. "Much can be done by individual communities to provide useful functions for our 'senior citizens' and restore to them a reason for living," Dr. Ruilmann said. The Council has adopted a mental health improvement program as one of its projects.

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**First Meeting
Held To Consider
TV Committee**

● Representatives of state-wide public and voluntary health agencies and television stations met at the TSMA Building in October to consider the organization of a Tennessee Television Committee for Health Education. The plan, as explained by the Public Service Director, would generally follow one adopted in Connecticut. There, health education programs for TV are prepared and produced by participating agencies on a rotation basis. A second meeting of the group has been scheduled in Nashville for November 11, at which time it is hoped that tentative plans for organization can be approved.

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**Societies Asked To
Send Committee Lists**

● County Society secretaries are reminded to submit a list of their society committee chairmen to the Public Service Office, if such a list is available. This information, especially the names of the chairmen of the County Society cancer and public service committees, is urgently requested.

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**Mental Health
Series Available
For Radio**

● AMA Health Education Bureau has released a new series of radio transcriptions, "Mind Alone," on the subject of mental health. The 13-program series, or brochures describing it, can be obtained upon request from the Public Service Office.

that night, using the postauricular incision. At operation there was some pus in the mastoid antrum and the cells showed some disease but no actual destruction. The lateral sinus and dura were not exposed, as their walls seemed intact. A drain was placed in the lower end of the wound. Cultures were taken from the mastoid cavity at the time of operation, but showed no growth.

She was placed on combiotics, dramamine and du-biotic troches. The next day she was some better but still had the trismus and was rather irritable. Thorazine, 15 mg. 3 times daily was begun.

The patient had a low grade fever of 100 degrees the next two days, and continued to have a profuse drainage from the wound and the ear.

Difficulty with eating and drinking increased and she complained of back pain when she was moved. Food and liquids were taken very poorly and she began to bite her tongue until it was quite chewed up. This course continued until October 31, or five days postoperative, when she developed full-blown convulsions and became cyanotic. It was impossible to get a tongue depressor between the teeth. Whenever she was touched, she went into spasms. She developed sever opisthotonus. The pediatrician finally was convinced that this was tetanus.

Repeated cultures of the ear and wound for anaerobic bacteria in special media revealed only *pseudomonas*.

Intravenous feedings were then started and Aureomycin added to the fluids. She was given 50,000 units of tetanus antitoxin and large doses of sedatives were started. The room was kept dark and visitors were excluded. Glyceride of

peroxide drops were used in the ear. She gradually improved and was taking a soft diet by November 4; she was discharged from the hospital on November 9. At this time the trismus had almost cleared but she had some stiffness of her back and walked in a stooped position.

The course was followed in the office; a daily toilet was carried out on the ear and she used glyceride of peroxide at home. The posterior wound healed nicely and the ear gradually dried up. At the last visit on December 4, there was a small perforation of the drum, but the ear was dry and hearing had returned to normal. All of the stiffness had disappeared from the back. The child had returned to school and was gaining weight.

Telephone conversation with her aunt this week revealed that she had been well until the past few days when she developed a cold and slight drainage from the ear.

Summary

A case of tetanus of otogenic origin is being reported. There was complete recovery after a stormy course. No previous injury which could account for the tetanus was discovered.

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CASE REPORT

Acute Rupture of Abdominal Aortic Aneurysm With Resection, Graft, and Recovery*

Robert P. McBurney, M.D., and

John R. Lovelace, M.D., Memphis, Tenn.

Surgical treatment of aortic lesions has ceased to be a rarity, and in most surgical centers successful resection of aneurysms of the aorta has become an established procedure. Aortic aneurysms with acute rupture still have a high mortality rate, however, and it is doubtful if successfully treated cases will ever become commonplace. The patient with this disease can be saved by resection and grafting as has been shown by the reports of Wilson and Bramlett,¹ Hardy,² Farrar and associates,³ and Cooley, DeBakey, and Creech,⁴ and numerous others. The following case illustrates some of the problems of resection and grafting and is an example of a successful outcome.

Report of a Case

H. S., a 71 year old negro man, was admitted to the John Gaston Hospital on April 12, 1956; his chief complaint was abdominal and back pain of 4 days duration.

In 1947, the patient had noted a pulsating mass in the midabdomen which had slowly enlarged during the ensuing 9 years but which had been essentially asymptomatic. He had had abdominal pain for 4 days before admission to the hospital. The pain was in the lower part of the abdomen, slightly worse on the right side, and was described as variable in intensity, sometimes sharp and severe, but otherwise dull and aching. It was not relieved by any change in position or by any medicine. The abdominal pain was associated with a severe backache in both flanks.

System review revealed that the patient had anorexia with nausea and vomiting during the 3 to 4 days before admission; he also felt feverish during that time. He had lost about 20 pounds in weight in the past 5 years and had had anorexia for about that length of time. In September, 1955, he had one episode when his stools had been tarry black.

The patient also had had dyspnea on slight exertion for the previous 10 years, headaches for the previous 2 years, and some ankle edema for the previous 2 months.

Physical examination revealed an elderly negro

man who appeared lethargic and in pain. The blood pressure was 104 systolic and 80 mm. Hg. diastolic. Pulse was 78 a minute, and respirations were 20 a minute. There were signs of cardiac enlargement and a few rales in both lungs. But the significant finding was a large pulsating mass which occupied the upper and middle parts of the abdomen, and which was slightly more evident to the right of the midline. The mass was slightly tender and not attached to the skin. The distal pulses were all palpable and within normal limits.

Routine laboratory studies were within normal limits. A chest roentgenogram suggested linear fibrosis in the base of the right lung. An excretory urogram taken the day of admission showed a large, ill defined, abdominal mass. The left ureter was deviated laterally by the mass.

At midnight the night of his admission, while the patient was walking to the bathroom, he had the sudden onset of severe abdominal pain. He collapsed on the floor and went into a shock-like condition. His blood pressure and pulse could not be obtained. The abdomen was distended and rigid. A transfusion and oxygen were immediately started, and the blood pressure returned to 90 mm. Hg. systolic. About one hour after his collapse, he was taken to surgery.

Operation. The patient was anesthetized with Anectine, cyclopropane, and oxygen. Continuous transfusions through two different veins were maintained throughout the operative procedure.

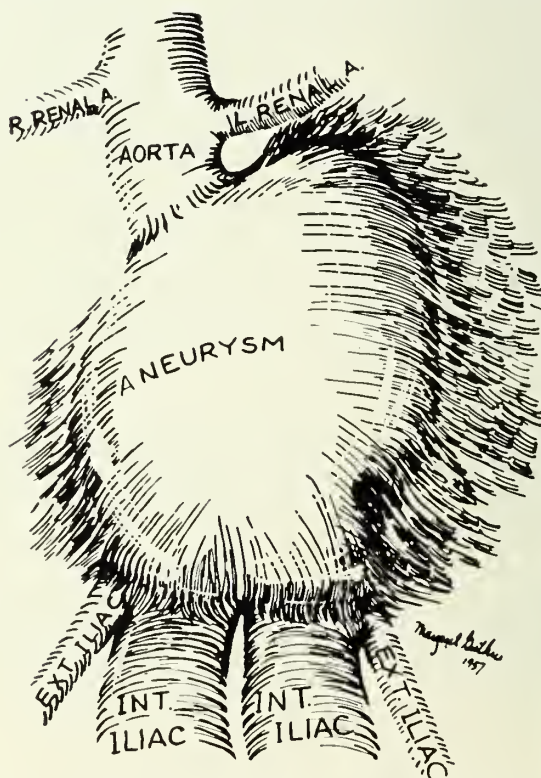


FIG. 1. Aneurysm involving the abdominal aorta and internal iliac arteries with rupture at the posterior lateral aspect.

*From the Departments of Surgery, University of Tennessee College of Medicine and the City of Memphis Hospitals, Memphis, Tenn.

The abdomen was opened through a midline incision from the xiphoid process to the pubis. When the abdomen was opened, about 300 to 400 cc. of free blood escaped, and we saw that a large mass of aneurysm and hematoma about the size of a football occupied the retroperitoneal area (Fig. 1). Dissection was first carried out on the upper aorta at the level of the renal vessels, and by finger and blunt dissection the aorta was mobilized in this region. A Sembs ligature carrier type clamp was then put on the aorta in that area, and the small intestine was then mobilized to the right side of the abdomen. After this step, a profuse hemorrhage occurred from the perforation in the aneurysm; it was partially controlled by pressure. The patient's blood pressure disappeared but returned to 80 systolic and 60 diastolic after control of the hemorrhage and rapid infusion of 1500 cc. of blood.

The external iliac vessels were found to be free of dilatation. Potts coarctation clamps were placed on the distal iliac vessels and ligatures applied proximally, and the external iliac arteries were divided. The internal iliac vessels were aneurysmal and measured approximately 4 to 5 cm. in diameter. The aorta was then divided about 2 cm. below the renal arteries at the site of the beginning of the aneurysm. Resection of the aneurysm was then carried out; the lumbar arteries and the inferior mesenteric artery were clamped as they appeared. The internal iliac arteries were divided and oversewn with continuous 0000 silk.

Because of the length of the resultant defect, it was necessary to use two homologous grafts sewed together to bridge the gap. The distal segment was a section of aortic arch, which was the only suitable graft available at the time.

The anastomosis was then completed (Fig. 2) and the wound was closed about 5½ hours after the beginning of the operation. The patient's blood pressure was 90 systolic and 60 mm. Hg. diastolic, and the peripheral pulses were good when the operation was completed. During the operation, 4,500 cc. of blood were infused.

The patient got along well postoperatively. The urine output was never below 500 cc. on any single day. The peripheral pulses remained good, and except for slight dyspnea for 3 or 4 days because of minimal cardiac decompensation, he felt well.

A small wound abscess required drainage on the eleventh day after operation. The patient was discharged in good condition on May 9, 1956. He was seen in the outpatient clinic in December, 1956, when he was still in good physical condition.

Discussion

Any exacerbation of pain, or sudden pain in an individual with a pulsating abdominal mass should make one suspect leakage from an abdominal aortic aneurysm. This pain may or may not be accompanied by shock



FIG. 2. Reconstruction of the abdominal aorta using an arch graft and abdominal aorta graft sewed together.

or symptoms of blood loss. Some patients have severe abdominal pain as the dominant complaint with a mass that may not be palpable.

Farrar and Sanders,⁵ who have reported 9 cases of ruptured abdominal aneurysms, have said that several of their patients had histories of vague abdominal pain or lumbar pain with radiation to the hip or groin for several weeks prior to rupture. All of their patients had histories of syncope or shock. Their examinations revealed signs of shock, abdominal masses which were often, but not always, pulsatile, abdominal distention, abdominal tenderness, and usually diminished peristalsis. A significant

feature in 4 of the 9 cases was an interval of more than 4 days from the beginning of rupture until death. In most of the other cases the interval was more than 24 hours. This interval from rupture until death is adequate to allow the surgeon time to proceed with operation in many patients. Obviously, no surgeon wishes to start working on a moribund patient, but in many instances prompt and large transfusions and control of hemorrhage will revive the patient and give some chance for survival.

The operative mortality in such cases will always be high, however. The mortality is practically 100 per cent without surgical intervention, so every patient saved is a triumph. Cooley, DeBakey and Creech⁴ report a 64 percent survival rate in 25 cases of ruptured aneurysm, a truly remarkable record and one which illustrates what can be done under ideal conditions in this otherwise uniformly fatal disease.

This presented case illustrates that if the operation is carried out early and the period of shock is short, renal failure is not the great problem it is in patients who have been in shock for longer periods.

Summary

Every physician should be familiar with the diagnosis of ruptured aneurysm, should consider it in every case of abdominal pain with hypotension, and should see that the patient is placed immediately under the care of surgeons who have had experience with such procedures.

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CASE REPORT

Epidermoid Tumor of Lacrimal Gland

Henry Carroll Smith, M.D.,* Nashville, Tenn.

The incidence of tumor of the orbit, primary or invasive, is not great. The recorded number of primary tumors of the type which I wish to discuss is impressively small. In a series of 200 cases reported by Pfeiffer,¹ the dermoid and epidermoid made up 4 per cent. Duke-Elder² could find in the literature descriptions of only 22 orbital tumors, unmistakably of the epidermoid type. Those reports which are to be found give various names to the tumors, such as *tumeur perlee*, and *cholesteatoma*, as well as dermoid and epidermoid cyst or tumor.

In 1829, Cruveilhier³ described *tumeur perlee*, drawing the name from the appearance of its refractile, pearly-grey wall. A few years later, Müller³ supplied the name *cholesteatoma*, because cholesterol crystals were found in its content. Today, both of these terms have been discarded. Since the origin of the growth is recognized to be the fetal inclusion of epidermal cells, epidermoid tumor becomes its logical name. Even this appellation seems academic, for dermoid, as well as epidermoid tumors develop from fetal inclusions, and the characteristics of each are so similar that the term dermoid should be acceptable for both. Whether the tumor becomes dermoid or epidermoid depends upon the depth of the epidermal layer, and upon the stage of fetal development at which the inclusion occurred. If ectodermal epithelium and mesodermal corium, with its connective tissue, fat cells, sebaceous glands, and hair follicles are embedded, the true dermoid will result. When the inclusion consists of only squamous epithelium the epidermoid will appear. Transitional forms, with admixture of the characteristics, make absolute distinction between the two impossible.

Anatomic Considerations

There are a small number of clinical points of differentiation. For instance, the dermoid is more apt to appear in multiple

form, and to be associated with other congenital defects. It is also more apt to be found outside the orbit at its rim. Expansion of the growth begins earlier than does that of epidermoid. The latter tends to be single, to be unaccompanied by other developmental aberrations, and to expand most usually during the third decade of life.

In the orbit the dermoid may be infinitely small, or may reach the size of an apple. It is encapsulated, and rounded or hourglass in shape. It is soft in consistency. The content of hair has been regarded as pathognomonic of dermoid. An epidermoid tumor is firm. It has a white or yellowish glistening capsule which is nodular and may be either tough or thin and quite friable. The capsule may contain a caseous laminated material, yellowish in color, or a softer whitish necrotic substance. The characteristics of the contained material depend upon the stage of its degeneration.

It should be mentioned that these tumors are occasionally the result of trauma, in which epidermal tissue becomes implanted in deeper structures. It should also be said that the term *cholesteatoma*, which is still used to some extent, would tend to confuse these growths with the postinflammatory masses which are formed in the middle ear and the nasal accessory sinuses.

Although the tumors are widely found in the human body, the most frequent site of their origin is the head.⁴ This is thought to be due to deviations in development of the pharyngeal pouches. The growths have been found in the mandible and the superior maxilla, the floor of the mouth, the lateral pharynx, the supratonsillar fossa, the maxillary, ethmoid and frontal sinuses; in many bones of the head, in the orbit, and even in the iris. They may arise from the meninges of the brain and spinal cord. In the cerebral ventricles they apparently develop from the choroidal plexus. They begin in the diploe of bone and, as they enlarge, they destroy the substance in every direction.

After briefly outlining the histologic structure of the dermoid and epidermoid, I should like to proceed with a consideration of the epidermoid tumor only.

As was previously stated, the distinctive

*Read at the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 8, 1957, Nashville, Tenn.

formation of one or the other of these tumors is determined by the depth of the fetal epidermal inclusion, and by the embryonal stage at which the inclusion occurs. Thus the dermoid from without inward is constructed of a fibrous layer, a connective tissue stroma (corresponding to the corium), and a single or multiple layer of epithelial cells. In the connective tissue layer blood vessels, sebaceous glands, hair follicles, fat cells, and smooth and elastic muscle fibers may be found. Sometimes calcium and cartilage formations are present. Within the cavity are hair, sebum, cholesterol crystals and oil.

The epidermoid is of simpler construction, having only an outer layer of collagen fibers with no cellular structure, and a lining layer of epithelial cells. The cytoplasm of these cells is dotted with fine granules of keratohyalin, giving the layer the name stratum granulosum. The wall encloses a mass of loosely packed layers of homogeneous laminae containing cholesterol crystals. This represents the end products of epithelial desquamation. This tumor is almost completely avascular.

Diagnosis

Differential diagnosis of tumors of the orbit calls for the examination of many possibilities. It has been said that nearly one hundred diagnoses need be considered.⁴ Were nomenclature better organized, this would not hold true. Reese⁵ has described a systematic procedure dividing the factors which suggest orbital growths, into neoplastic, primary and secondary, and into the manifestations of general disease. The primary growths include osteoma, fibroma, hemangioma, lymphosarcoma, neurogenic nerve growths, carcinoma, sarcoma, mixed tumor of the lacrimal gland, pseudotumor, and dermoid. Secondary growths are extensions from within the cranium or the accessory nasal sinuses, such as meningocele and mucocele, as well as the malignant types of tumor. Metastatic growths from the adrenal, prostate, breast and other glandular areas, as well as systemic disorders, such as thyrotoxicosis, xanthomatosis, leukemia, Hodgkins Disease and sarcoidosis require consideration.

To identify the cause of orbital symptoms

and to outline treatment calls for a great deal of correlative study.

Roentgenography may provide significant aid in determining the location and extent of an orbital mass, and particularly in disclosing whether or not destruction of bone has occurred. Malignancies invade bone, xanthoma and eosinophilic granuloma arise in it; other tumors by expansion erode it, and, in some cases, produce changes which are indicative of their character. The epidermoid is one of these. Pfeiffer¹ has reported 9 cases with typical bone changes demonstrable by the X-ray.

Since these tumors may arise in the diploe of the cranial bones, their growth produces expansion of both the inner and outer tables, eventuating in destruction. When they arise subperiosteally or subperiorbitally, their progress leads to fossae, or indentations of the bone with distinctive outlines. Such changes give indication of the nature of the growth and Pfeiffer feels that they represent a possible means of its diagnosis. The picture will show a defect with sharply demarcated margins, and with increase of density of the bone adjacent to the margins which suggests reaction. Within the margins, apparently because of the nature of the tumor, diminished tissue density is seen. By destroying the orbital wall the tumors may invade the sinuses or the anterior cranial fossa. Givner and Wigderson⁶ reported a case in which an epidermoid the size of an apple was removed under local anesthesia from the frontal region of the cranium. It was found that erosion included both the frontal bone and the roof of the orbit, so that the operation exposed the orbital content.

The case from which this X-ray picture (slide) was obtained was reported before this Society by Lawrence,⁹ in 1949. It demonstrates very clearly the bone defect which is characteristically produced by epidermoid.

By clinical evidence alone it is seldom possible to identify the cause of orbital symptoms which may suggest tumor. The ophthalmic surgeon, then, with possibly less experience than others, because of the infrequency of encounter, must decide whether and by what route to explore the orbit.

Benedict¹⁰ in an article on the surgical treatment of tumors and cysts of the orbit gives four factors which one should weigh:

1. The threat to vision.
2. The probable location of the lesion.
3. Evidence of growth and metastasis.
4. Age and general condition of the patient.

Biopsy of an orbital tumor by any method, including aspiration, is frowned upon by many. In the epidermoid the content of the mass is sometimes irritating so that orbital inflammation may follow the procedure. Because of the difficulty of determining the size and extent of the mass, the method of attack should receive serious consideration. A tumor which presents anteriorly may extend to the apex of the orbit, or farther. Therefore, an approach through the orbital outlet may prove ill chosen. The Krönlein procedure offers greater exposure and, in many instances, is sufficient. It appears, however, that more and more surgeons are concluding that orbital tumors, in which there can be any question of extent or bone damage, should be approached transcranially. In 1952, at the Mayo Clinic, after 108 cases in which the transcranial procedure was chosen, Love and Dodge¹¹ stated that in their opinion this method is practical and safe, and offers the fullest chance of complete recovery with intact vision. Thus the ophthalmic surgeon is well-advised to seek the assistance of the neurosurgeon.

Case Report

Only two cases of epidermoid tumor of the orbit have occurred in the years of my practice. The first was reported by Lawrence.⁹ Biopsy was performed and the capsule of the tumor opened; fortunately, no inflammation of orbital tissues developed. This tumor lay beneath the periosteum of the lateral orbital wall, and extended far backward toward the apex. It was successfully removed by a transcranial approach. After 9 years there has been no recurrence.

The second case was seen 5 months ago.

Mrs. W. H., 28 years of age, had had a small protrusion of the left upper eyelid just below the eyebrow for many years. Recently the defect had been growing more pronounced; she denied

injury. She had no complaint regarding vision.

Except for a somewhat firm mass which seemed to occupy the lacrimal fossa and could be palpated posteriorly along the orbital roof, the examination revealed nothing. X-ray film of the orbit showed no abnormality. Physical examination, including blood studies, gave no evidence of disease.

Thinking of the probability of its being a mixed tumor of the lacrimal gland, and of the possibility of bone invasion, consultation was had with a neurosurgeon. With a negative X-ray report, and in the absence of exophthalmos or other change which might indicate an extensive growth, he recommended that the tumor be removed by the anterior approach.

Mindful of the admonition offered by Benedict¹⁰ after experience with 700 orbital tumors, that a surgeon should be prepared in any attempted operation to complete the necessary surgical treatment; and that he should refrain from meddlesome interference to satisfy curiosity in indeterminate cases, the operation was undertaken with caution, and with a determination to withdraw if the mass proved too extensive for safe removal by that method.

The anterior portion of the tumor was cystic with a thin lobulated wall. It had a yellowish color. The posterior portion was firm and extended in a tapering fashion a distance of 15 mm. along the orbital roof. The entire mass was removed with little difficulty, leaving the lacrimal fossa with its periosteal lining undisturbed. No evidence of bone destruction could be found. Apparently the growth had replaced the orbital portion of the lacrimal gland. The palpebral portion was not disturbed. The content of the cystic portion was yellowish and caseous. Through a rupture of the thinnest portion of the wall, some of this material came in contact with orbital tissue; however, evidence of inflammation did not appear. Carbolicization of remnants of the cyst, as recommended by Pfeiffer, did not become necessary.

Microscopic examination revealed the structure seen previously, which could only be diagnosed epidermoid cyst.

Summary and Conclusion

The occurrence of an epidermoid growth of the lacrimal gland need not be considered singular. This tumor has been found in many glandular structures. Record of its occurrence has been difficult to discover, the only definite report of epidermoid cyst of the lacrimal gland being that of Rolett,¹² who also reported the same type of growth in the caruncle.

Discussion of diagnosis and treatment of the epidermoid tumor in the orbit, where its incidence is somewhat infrequent, seemed relevant to the presentation of this one case of the tumor arising in the lacrimal gland.

Had the patient been seen at a later stage of the tumor's development, clinical signs suggesting its nature might have been found. The presence of epidermoid cyst is a worthwhile consideration when any case of tumor occupying the site of the lacrimal gland presents itself.

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Discussion

DR. WILLIAM GARROTT (Cleveland): Dr. Smith is to be commended for bringing to us this discussion of this most interesting subject. He has done it in his usual thorough manner, and I appreciate his suggestion that I might add something to the discussion.

The fact that the condition is so rare that he has seen only two cases in his practice does not indicate that it holds little interest for us. Rather it should stimulate us to be on the look-out for it.

The dermoid group of tumors has always been especially fascinating to me since I first heard of them in the lectures of Dr. B. T. Terry. They fascinate me by the almost limitless possibilities as regards their location, and the essayist has referred to this factor in his paper. I am always anxious to open up one of the things and see what is inside it; and to speculate upon just how a given dermoid tumor happens to develop, considering the embryologic background. And last but not least, when I need some philosophic "alibi-ing" for myself I can always say: "If Mother Nature, with all her aeons of experience, can make such mistakes in the working of the same old problem of reproducing identical specimens over and over, maybe I can be excused for making some of the mistakes which can be found in my record."

Dr. Smith has described the appearance of the dermoids and the epidermoids and has gone into the matter of differential diagnosis fully. I can add that one would suspect a metastatic tumor in the lacrimal gland when he had prior knowledge of the existence of the primary tumor, or more frequently, the primary tumor would be dis-

covered in a search after a biopsy or removal of the lacrimal gland tumor.

The surgical approach to orbital tumors opens a lot of discussion, and I am sure no one approach will become the one and only acceptable one. Without belittling the neurosurgeons' methods and skills, I have not been convinced that the transcranial route is by any means always desirable, or proof against damage to orbital contents, or without some extra hazard to life itself. Therefore I do not feel we ophthalmologists should surrender the orbital tumors to the neurosurgeons in every case. It was recently my privilege to hear a presentation by Dr. Raynold N. Berke, of Columbia University and Presbyterian Hospital, on a modification of the Krönlein operation, by which almost anything in the orbit can be visualized as well as through the roof of the orbit, and can be removed as successfully. I am sure some of you heard that presentation at the February meeting of the Memphis Eye, Ear, Nose & Throat Convention in February, 1957.

In the condition under discussion, I am not sure I have had any experience with it, but can cite one case from my practice which belongs in the dermoid-epidermoid group of tumors.

I first saw the patient about 15 years ago, in her early teens. She complained of a swelling at the outer end of the right upper lid and a sensation of something scratching her eye in that region. Examination revealed a small rounded mass in the palpebral portion of the lacrimal gland, fairly soft in consistency, without any abnormal fixation of tissues. In addition, there was a flat plaque-like mass of tissue under the bulbar conjunctiva, apparently growing from, or at least attached to, and continuous with the lacrimal gland. The bulbar conjunctiva was freely movable over this plaque. Examination of this area with the loupe revealed two or three ends of hair protruding from the plaque through the conjunctiva, indicating that the flat mass had some of the characteristics of skin, yet was completely covered by conjunctiva. I have never been able to persuade the patient or her family to have the tumor of the gland and the misplaced dermal tissue removed, so I cannot give you any pathologic report. Up to now the only treatment I have been permitted to give is the epilation of another crop of protruding or erupting hairs at intervals.

In my opinion she has two closely related conditions, one showing a complete inclusion of some dermal elements and forming a dermoid or an epidermoid cyst, and another showing an island of dermal tissue, aberrant in position but not completely "included," so to speak, and covered by conjunctiva. The patient is now in the third decade, and judging from the literature she is probably in for some malignant changes before too long. I hope she will consent to operation before it is too late.

Again I wish to thank Dr. Smith for bringing us this presentation, and to express my gratitude for the opportunity to discuss it.

CLINICOPATHOLOGIC CONFERENCE

Kennedy Veterans Administration Hospital*

Subdural Hematoma

E. U. Scharff, M.D., and J. M. Young, M.D.

Case Presentation

This 61 year old colored man was admitted to this hospital in a semicomatose condition. He was unable to give a history, but a combined history obtained from his wife and a friend revealed that he had been up and about until 3 days prior to admission. He went to bed feeling well but could not be roused in the morning, although no serious attempt was made to do so. He continued this way for 3 days before medical advice was sought at which time hospitalization was recommended. In the past 10 years the patient had been drinking alcohol to the point of becoming drunk frequently. It was thought that he had been drinking on the day prior to his loss of consciousness; however, the history is not clear on this point. According to his wife, the patient had not been feeling sick or sought medical attention in the several years she had known him. No history of trauma was elicited.

Examination: T. 100°, P. 92, R. 28, B.P. 160/114 in the left arm, and 158/104 in the right arm. The patient was a well developed, elderly colored man who would respond to the extent of opening his mouth and moving his eyes when asked to do so. He did move all of his extremities but used his left arm and left leg less than his right. The neck was supple.

The pupils were constricted, round, equal and regular and reacted to light. The fundi were not visualized. The eyelids were closed with dry secretions present. The teeth were in poor condition. Tracheal bubbling was heard on examination of the lungs. The heart was not enlarged, A₂ was louder than P₂. No murmurs were present. Over the flexor surface of the right forearm there was an extensive area of crusting which represented an old burn. There were areas of excoriation over the right thigh laterally, and there were several small crusted lesions over the lateral surface of the left forearm, over the left fourth finger and over the left lower thigh laterally. Reflexes were equal, bilaterally. There was some withdrawal on attempting to elicit a Babinski but it was felt that this sign was positive on the left. There was a paresis involving the left arm and left leg, and a left facial droop.

Laboratory Studies. Urinalysis: reaction 4.5, specific gravity 1.020, albumin and sugar negative, microscopic, negative. BUN was 43 mg., and fasting blood sugar 82 mg. per 100cc. Hgb. was 12.6

Gm., hematocrit 43%. Red cell count was 4.9 million, white count 12,900 with 84% neutrophils, 14% lymphocytes and 2% monocytes. CO₂ was 23 and again CO₂ 17.5, chlorides 104, sodium 136, and potassium 4.2 mEq/L. The spinal fluid was xanthochromic and microscopic examination showed 163 RBC per cu.mm. and 1 WBC which was a lymphocyte. A trace of globulin was present, sugar was 82 mg., total protein 54 mg. per 100cc. Cardiolipin test was negative, and colloidal gold 0000 000 000; the spinal fluid pressure was 230 mm. Serum bromide was 10 mg. per 100cc.

X-ray Examination. A portable X-ray film of the chest was within normal limits.

EKG showed a sinus tachycardia and left ventricular enlargement.

Hospital Course: After admission the patient's degree of coma deepened rapidly, and he never regained consciousness. He required parental fluid and gastric feedings. There was low grade fever up to 100.8°. He was treated only with supportive therapy and died on his 3rd hospital day.

Discussion

DR. E. U. SCHARFF: The problems presented for consideration in this protocol may be approached first by considering the anatomic location of the lesions and then reviewing possible pathologic explanations for the clinical and cerebral spinal fluid findings.

From the neurologic findings given, all one is justified in saying is that the lesion is located in the right cerebral hemisphere, probably in the neighborhood of the pyramidal tracts. The differential diagnosis in a case of sudden coma and hemiplegia is twofold. Cerebral vascular accident must be differentiated from other lesions of the nervous system and an attempt should be made to determine which form of cerebral vascular accident is present. In this case, brain tumor and brain abscess seem unlikely, since a history of slow and progressive evolution of symptoms is not present. The absence of pleocytosis is also against the diagnosis of brain abscess. In the absence of evidence for endocarditis, auricular fibrillation, recent coronary thrombosis, septicemia or embolic phenomena, one cannot make the diagnosis of cerebral embolus.

The differentiation between hemorrhage and thrombosis is difficult since both occur in patients of the same age group with hypertension and arteriosclerosis. The on-

*From the Medical and Laboratory Services of the Veterans Administration Medical Teaching Group Hospital (Kennedy), Memphis, Tenn.

set with convulsions, severe headache, nausea or vomiting and Cheyne-Stokes or labored respiration favor intracerebral hemorrhage. Stiffness of the neck, quadriplegia and bilateral Babinski signs occur more often in cases of cerebral hemorrhage. In this case the presence of xanthochromic fluid under slightly elevated pressure does not rule out either intracerebral hemorrhage or thrombosis. Epidural hematoma seems unlikely in the view of the absence of history of recent trauma and in the absence of the correlating physical findings suggesting recent head trauma. I assume a skull X-ray film was not taken. The presence of a fracture line which crosses the groove of one of the meningeal arteries or displacement of the pineal gland would be strongly suggestive evidence in favor of an epidural hematoma. Dissecting aneurysm of the aorta could possibly cause this condition but there are no supporting features such as thoracic or back pain, absence of peripheral pulsations, or X-ray changes of widening of the aortic arch to support this diagnosis. It is difficult to diagnose a specific artery syndrome in the absence of adequate history and more detailed neurologic abnormalities. This brings me to a somewhat shaky conclusion that this man had a subdural hematoma.

Chronic subdural hematoma was first brought to the serious attention of the medical profession by Putman and Cushing in 1925. It was once thought to be rare, but now is considered quite common. Trauma to the head is now accepted as the etiologic factor. As a rule the head injury is comparatively mild and in many cases so slight as to have been entirely forgotten until careful questioning recalls the occurrence. Generally the patient was no more than dazed by the blow. Only a few report an injury sufficiently severe to cause immediate unconsciousness. Most of the blows causing chronic subdural hematomas are on the front or back of the head. Parietal injuries are less often the cause since protection from lateral displacement is given by the falx. The short delicate bridging veins which pass almost vertically from the superior surface of the cortex to the dura near the midline are not protected from an-

sufficient movement between the brain and the dura to rupture these veins at their dural attachment.

terior or posterior force which may produce

Chronic subdural hematoma may occur at any age but is most frequently seen between the ages of 40 to 70, the highest incidence being in the sixth decade. The trend may be to somewhat lower ages due to increasing numbers of auto injuries now. Chronic subdural hematomas are much more common in males. Most of these are found on the lateral aspects of the frontoparietal region, but may be found over the occipital poles, entire cerebral hemispheres or elsewhere. The size varies and there is no relationship of size to the duration of the lesion. Most observers believe the hematomas gradually increase in size either by repeated hemorrhage into the cyst or by transudation of serum from the adjacent capillaries. Some believe spinal fluid is drawn into the cyst by osmotic pressure.

The onset of symptoms varies from days to several months after the head injury, the average being about three weeks. Headache of varying severity is perhaps the most common symptom. Location of the headache bears no relationship to the location of the hematoma. Drowsiness is often present and may be mild or severe. Nausea and vomiting are frequent. Mental confusion, particularly changes in personality, are often noticed in the attitude of the patient toward his work and his family. Jacksonian attacks and generalized seizures are comparatively rare. Complete paralysis of the contralateral face, arm and leg is not seen often; more commonly mild and transitory weakness is found. Occasionally the paralysis is ipsilateral occurring in massive lesions with contracoup pressure effects. Inequality of the pupils is common. Blurred vision or diplopia sometimes is noted. Palsies of the third and sixth nerves are sometimes seen in severe cases. The fundi may be normal, but usually venous engorgement is found and frequently small retinal hemorrhages may be observed; frank papilledema is rare. Lumbar puncture shows a slight increase in pressure, and occasionally recordings of 300 to 400 mm. of water are observed. The fluid is clear and may be

colorless but is more often straw or xanthochromic in color.

The skull films are usually normal. Ventriculograms may be helpful but the definite diagnosis can only be made by opening the dura through an exploratory trephine. Sudden episodes of coma and hemiparesis do occur in these cases without premonitory signs. This may be due to sudden bleeding into the cyst. In spite of the lack of history of head trauma, the findings of xanthochromic fluid in an alcoholic with coma and hemiplegia makes it imperative to rule out chronic subdural hematoma.

One thing that disturbs me about this case was the description of the skin lesions. Were they traumatic in origin with some secondary infection or did they have other significance?

My clinical diagnosis in this case is subdural hematoma.

Clinical Diagnosis. Subdural hematoma.

Anatomical Findings

DR. J. M. YOUNG: The postmortem examination disclosed a well developed and nourished elderly negro male who exhibited crusted lesions and scars over the extremities. Cultures from the crusted lesions did not reveal acid-fast or fungus organisms. The pleural spaces contained no excess fluid, but the lungs weighed 800 Gm. each and were edematous. Dissection of the bronchi revealed much mucopurulent material, and grossly and microscopically the lung tissue revealed much edema fluid and focal areas of lobular pneumonia. The heart weighed 400 Gm.; microscopically the muscle fibers were slightly hypertrophied. The spleen, liver, and kidneys were moderately congested. The other organs, except for the brain, were not remarkable.

Elevation of the calvarium disclosed a dark red clotted mass of blood over the left cerebral hemisphere. The cerebral convolutions were markedly flattened. There was herniation of the right uncus gyrus below the tentorium of the cerebellum. The subdural clot extended over the entire convex surface of the hemisphere and was 3 cm. thick in the midportion. Microscopically, there was early organization along the dural margin, but most of the clot was of recent origin. Stripping of the dura did not reveal a fracture of the skull. Sections from the brain showed only edema. The brain weighed 1420 Gm.

As in this case, it is often difficult to elicit a history of trauma. Trauma which produces a subdural hematoma need not be severe. The usual etiology is a tearing of the bridging veins which connect the cortical veins to the dural sinuses. In chronic subdural hematoma the time interval between injury and marked symptomatology may be weeks or even months. In our case today, however, this interval covered only about one week. Chronic alcoholism in the cases of subdural hematoma is very common. Our case may be classified as almost an acute subdural hematoma with marked cerebral edema.

An interesting feature is the left subdural hematoma associated with left sided neurological findings. Here the cause was the transtentorial herniation of the brain stem and uncus gyrus which resulted in severe compression, more on the right than the left. This, no doubt, accounted for the coma also.

Anatomical Diagnoses

1. Subdural hematoma, left.
2. Cerebral edema.
3. Lobular pneumonia, bilateral.

President's Letter



J. PAUL BAIRD

eration of contributions to other funds but I feel that by necessity this should be done.

There are two fields of endeavor to which every physician should give some serious thought, and dig a little deeper in his funds to support. These are our own projects administered by physicians, and contributing to the very things in which we are primarily interested. They are help for our medical schools, matters of good public relations and improved medical care for the public.

The first of these I have already stressed on this page in the August issue in regard to the American Medical Education Fund. Our support of this in the past with a few thousand dollars has brought to the three medical schools in the state more than \$387,000. If you ask how this is possible it is because our contributions are pooled with the National Medical Foundation which receives funds from industry and business. These funds are handed out to universities with no restrictions or qualifications as to use.

The second field of endeavor which should bring out some thought and financial support, is our own Tennessee Medical Foundation. This Foundation should not be confused with the American Medical Education Fund or the National Medical Foundation. This is a misconception I have found to be present among many otherwise well informed physicians.

The historical background of the Tennessee Medical Foundation perhaps needs some clarification as well as its objectives and purposes, present and future. At its inception, sponsored by the Tennessee State Medical Association it was organized as a separate body, or Foundation, to receive funds which the Association could not accept. It was believed that these funds contributed by physicians, their estates, or any individual or organization would be dis-

tributed by the Directors of the Foundation in the field of scholarships, post-graduate work, the placement of physicians for better distribution in rural areas and for study of economic problems of medical care in low income areas.

One of the first projects undertaken by the Tennessee Medical Foundation was to correct the low level of medical care centered in Pruden Valley. How successfully this was carried out, sustained by bounteous grants from the Commonwealth Fund and the United Mine Workers Funds has been publicized by the Harvard University Press and by Life Magazine. Our Association and the Foundation achieved national publicity as the only agency which accepted the challenge to determine what could be done to provide better medical care in the sparsely settled rural areas. It has been referred to as the most outstanding, independent piece of public service ever rendered by a State Medical Society.

The unfortunate part of it is that since its activities have been limited to a small area in East Tennessee that most physicians have not been cognizant of its work and have given little thought as to how its activities might be successfully extended to other areas in the State. It is also unfortunate that the grant from the Commonwealth Fund has been expended and the United Mine Workers Contributions are being decreased.

As a result your Board of Trustees has instructed me to appoint a Liaison Committee to the Foundation for further study of the aims, extension of activities in public service and rural health, and its visiting consultant program. This study deserves to be supported by the united efforts of our profession and we must keep the Foundation alive by our continued financial support.

So before your check signing hand takes writers cramp, send a check at least to each of these organizations, administered by physicians who know medical problems and are doing such a creditable work, the American Medical Educational Foundation and our own Tennessee Medical Foundation.

A handwritten signature in cursive script that reads "Paul Baird".

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NOVEMBER, 1957

EDITORIAL

SARCOIDOSIS—IS IT A DISEASE OF THE SOUTHEASTERN AREA?

Although sarcoidosis was originally described in 1875 by Hutchinson,¹ interest in the disorder was actually stimulated in 1936 by Hunter,² and in 1937 by the detailed report of Longcope and Pierson.³ Since that time a considerable amount of clinical and laboratory information has been gathered relative to the disorder.

More recently Michael, Cole and Beeson⁴ have focused their attention on the epidemiology of the disease. They analyzed the

background of patients with sarcoid and found the majority were born in the southeastern United States. They therefore ascribed the disease to the character of the soil in our southeastern area. Later, Carr and Gage⁵ reported 117 patients from the Mayo Clinic; their analysis failed to confirm this concept.

Recently Dunner and his associates⁶ reviewed the records of 160 patients, veterans under observation in the 172 Veterans Administration Hospitals. This is an initial survey from a group of 1,194 patients diagnosed as having sarcoid.

A cataloguing of symptoms and signs is included in the report, as well as an analysis of the various diagnostic procedures employed. The study of the individuals with the disease shows a high incidence among Negroes born not only in the southeastern area, but to a lesser extent in the north central and New England states. The underlying factor does not appear to be the soil, but seems related to the eastern forests, of which the pine is the predominant tree.

In both Negroes and whites the most frequent sites of the disease process are the lungs and hilar lymph nodes, as well as lymph nodes generally. In the white patients the liver and spleen are involved with greater frequency, while the skin and eyes are more commonly involved in the Negro patients. Cough, loss of weight, dyspnea, fatigue, and chest pain are the symptoms met with most commonly. The laboratory findings of importance are an elevated total serum protein with a relative hyperglobulinemia, a leukopenia and eosinophilia, an elevation of the serum alkaline phosphatase, and a serum calcium greater than 11 milligrams per cent.

As was emphasized recently by Michael,⁷ sarcoidosis should probably be regarded as a syndrome rather than an isolated disease entity. Beryllium disease, histoplasmosis

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⁵Carr, D. T., and Gage, R. P.: The Geographic Distribution of Sarcoidosis, Am. Rev. Tuberc. 70:899, 1954.

⁶Dunner, E., Cummings, W. M., Williams, J. H., Schmidt, R. H., and Barnwell, J. B.: A New Look at Sarcoidosis, South. M. J. 50:114, 1957.

⁷Michael, Max, Jr.: Sarcoidosis—Disease or Syndrome, Am. Clin. & Climatol. Assoc. Meeting, Oct. 28, 1957.

and infection with *Cryptococcus neoformans* may present a clinical picture similar to that of sarcoid. Similarly, some forms of leukemia also may resemble sarcoid. Virulent tubercle bacilli may be found in some patients with clinical evidence of sarcoid, and conversely sarcoid is seen in patients who are tuberculin negative. It may be difficult, therefore, to settle on a specific etiologic agent and a narrowed concept of the clinical manifestations of sarcoidosis.

However, the question of the relationship of soil or forest or race to the occurrence of sarcoidosis is far from settled. Negroes in the northern cities do not show a frequent incidence of the disease. In addition, the possible factor of the influence of a temporary residence in the southeastern area while on military maneuvers has not been properly evaluated in the study of patients who actually live outside the southeastern area.

In any event, physicians in the southeastern area should be prepared to consider the possibility of sarcoid in the differential diagnosis of many obscure problems.

A. W.



EFFECTS OF INFLATION ON MEDICAL CARE

No person who spends a dollar is unaware of inflation. Every consumer knows his dollar spent for clothes, food, transportation, housing and luxuries has been buying less and less of these commodities or service since about 1940. Beginning with World War II and down to the present the inflationary trend has been progressive. A recent discussion of "Medical Care in the Consumer Price Index, 1936-1956," by Elizabeth A. Langford¹ of the Department of Labor is a revealing study.

The preamble to her discussion indicates "growing concern about the burden of medical costs in the aged and other low-income groups and in cases of prolonged illness or disability." The author implies that medical attention has been better during the past decades because of advances in care,

increased ability of the consumer to pay, greater availability of care, and now methods of payment (insurance and other schemes).

In general, it appears that service prices always lag behind a rise in prices for commodities. Thus, from 1936 to 1946 the price of commodities rose 52 per cent, that of services a half of that. However, from 1946 to 1956 service prices gained 50 per cent, catching up to commodity prices which rose 37 per cent in that decade. Actually, the author says, service prices had gained 18 per cent in the last 5 years whereas commodity prices have remained about the same. It appears that medical care prices followed other services in this rise, all services bearing about the same relationship to commodity prices as in 1936.

In a comparison of the Medical Care Index with other items in the Consumer Price Index, medical care ranks fourth in percentage increase in the 20 years, behind food, personal care, and apparel. (The Consumer Price Index is using the 1947-49 as a base and equal to 100.) At this point it should be noted that medical care includes hospitalization, drugs, eye glasses, dentists' fees and physicians' fees. It is the cost of hospitalization which has contributed most to the rising costs of medical care. This is understandable since the hospital reflects the effects of inflation in terms of wages and the costs of commodities. Nevertheless, Langford's comparisons of individual service items are of interest, thus the per cent of increase from 1936 to 1956 is as follows: Hospital room rates 265%; men's haircuts 221%; shoe repairs 135%; movie admissions 114%; public transportation 113%; laundry service 108%; automobile repairs 84%; dentists' fees 82%; general practitioners' fees 73%; surgeons' fees 60%. To put it in another way, beginning with 1941, the year when the Medical Care Index began to climb, the average annual increase has been 4%, the result of an average annual increase of 8.5% for hospital care, 2% for drugs and optometric services including eye glasses, 3.9% for dentists' fees, 3.6% for general practitioners' fees, and 3.1% for surgeons' fees. Obstetrics is the outstanding exception to modest rises. The entire

¹Langford, Elizabeth A.: Medical Care in the Consumer Price Index, 1936-56, (U. S. Department of Labor, Bureau on Labor Statistics) Monthly Labor Review (reprint No. 2251) September, 1957.

Consumer Price Index for 1956 was 194.3% and all physicians' fees were below this except for the fees for obstetrical cases which stood at 218 or 24 points above the general Price Index. (The general practitioners' office fees were 173, house visits 161 and appendectomy 155 as against the 194.3 Consumer Price Index. The index of hospital room rates stood at 356 for 1956.)

In an editorial² in the J.A.M.A., representing an analysis of Langford's data, it was pointed out that a large factor in the \$3,451,000,000 spent for hospital care and the \$3,269,000,000 in physicians' services may be related to the great increase in births and a rising trend in births in hospitals. These increased costs do not represent, therefore, increased need for medical care because of sickness. In fact, the Consumer Price Index shows higher expenditures for alcoholic drinks, for tobacco, and for personal services than for hospital services.

The A.M.A. economists have translated medical costs into the medical care dollar or 100 cents. Thus, the physician's part has declined from 32.7 cents in the 1929 dollar to 27 cents in 1956; the cost of hospital services has climbed from 13.7 cents in 1929 to 28.5 cents in 1956. Or, putting it in another way,—if a doctor's fee for a dozen office visits or house calls would have cost a worker a whole week's wage before World War II, in 1956 it would have cost 48 per cent of a week's wage.

How does the physicians' income compare to that of the past? The J.A.M.A. editorial quotes the U. S. Department of Commerce as saying that the doctors' income in 1951 is 122 per cent higher than in 1929, and that the average level of the gainfully employed is 125 per cent higher. Thus, the physicians' increase has climbed along with other incomes though, as has been pointed out, the rise in the cost of services always lags behind the rise in commodities.

Inflation touches all of us and we should be aware of these facts as thinking citizens of a community.

R. H. K.

²Editorial. Inflation and Medical Care, J.A.M.A. 165:600, 1957.

DEATHS

Dr. Merrill Moore, 54, formerly of Nashville, died September 20th at Quincy, Massachusetts. Dr. Moore was an internationally known psychiatrist.

Dr. Ammon Cabler Moore, 88, Orlinda, died September 7th at the Jesse Jones Hospital in Springfield.

Dr. Joseph Anthony Buchignani, 47, Memphis, died October 8th at the Memphis Baptist Hospital.

Dr. Harry Johnson, 51, Memphis, died at his home on September 20th.

Dr. Robert Madison Darnall, 49, Union City, died at his home on September 25th. His death was due to a heart attack.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Memphis-Shelby County Medical Society

The Memphis and Shelby County Medical Society held its regular session on September 3rd in the auditorium of the Institute of Pathology. Dr. D. H. James of the Memoirs Committee paid tribute to Dr. Moore Moore, Sr., who died on June 28, 1957.

A Resolution from the Trustees of The Memphis Medical Journal has passed in the House of Delegates whereby members of the Society could submit papers for publication that have not been read before the society or other medical meetings. The scientific program consisted of a panel entitled "Should a Patient Be Told He Has Cancer?" The panel consisted of Mr. John S. Montedonico, attorney; Dean William E. Sanders, Rector, St. Mary's Episcopal Church; Dr. D. C. McCool, Psychiatrist; and Dr. R. L. Sanders, Surgeon. One hundred and fifty members of the society were present for the meeting.

Nashville Academy of Medicine and Davidson County Medical Society

The Society held its regular monthly meeting on October 8th at the Baptist Hospital. Members met for dinner, after which the scientific program was presented. The program consisted of Roundtable Discussions on the subject "Psychiatry and Medicine." Sub-topics and moderators were:

"Psychiatric Emergencies"—Dr. Otto Billig; "The Chronic Complainer"—Dr. William F. Orr; "The Depressed Patient"—Dr. Frank Stevens; "The Emotionally Disturbed Child"—Dr. H. James Crecraft; "Overeating, Overdrinking, Oversmoking, Oversexed"—Dr. Charles Smith; "The Anxious Patient"—Dr. Albert R. Lawson; "Limits of Psychiatric Treatment"—Dr. Robert Adams; and "Use and Misuse of the Tranquilizers"—Dr. Dr. Robert Foote.

Chattanooga-Hamilton County Medical Society

The Society met on October 3rd in the Interstate Building. The program consisted of papers entitled "Thyroid Hormone Therapy" by Dr. Fay B. Murphey, Jr.; "Hirshsprungs Disease" by Dr. Joseph W. Graves, and a Case Report "ACTH in Retrobulbar Neuritis" by Dr. Stewart Lawwill, Jr.

Dr. M. A. Bastiaance, professor and head of the Department of Obstetrics and Gynecology at the University of Amsterdam, Holland, spoke at the dinner meeting of the Society at Erlanger Hospital on September 17th, on the subject of, "Toxemia of Pregnancy and Repair of Fistulas."

Knoxville Academy of Medicine

The Knoxville Academy of Medicine held its regular monthly meeting on October 8th in the Academy of Medicine Hall. The scientific program consisted of a Case Report by Dr. Victor Klein, Jr., entitled, "Spontaneous Rupture of the Esophagus." Dr. William K. Rogers spoke on the subject "Bronchoscopy, Its Place in Diagnosis and Treatment." The discussion was led by Dr. D. H. Waterman.

Roane County Medical Society

The Society held its regular meeting on October 29th, in the Dining Room of the Oak Ridge Hospital. The program consisted of a paper entitled "The Treatment of Ocular Injuries" by Dr. Philip Meriwether Lewis, Professor of Ophthalmology at the University of Tennessee, Memphis.

Bradley County Medical Society

The Society's regular monthly meeting was held on October 8th in the home of Dr. C. T. Speck, Jr., who was host to the society for dinner. An interesting program and

social meeting was attended by a large group of the members.

Consolidated Medical Assembly

The Consolidated Medical Assembly of West Tennessee held its regular monthly meeting on October 1st at the New Southern Hotel in Jackson. Papers were read by Dr. Richard L. Wooten, Dr. Alvin J. Cummings, and Dr. Edward Storer, all of the University of Tennessee in Memphis.

NATIONAL NEWS

The Month in Washington

(From the Washington Office, AMA)

Several months in advance of the return of the 85th Congress for its election-year second session, influential figures in the field of health in both the executive branch and in Congress were being heard on what 1958 has in store for the medical profession.

Because of the roles they play in the Capital, their views are worth more than passing notice. One is the chairman of the important health appropriations subcommittee of the House, Rep. John Fogarty (D., R.I.). He used as a forum for his prophecies the annual convention of the American Hospital Association.

Other prognostications came from Dr. Aims C. McGuinness, special assistant for health and medical affairs to Secretary Folsom of the Department of Health, Education and Welfare. Dr. McGuinness spoke out at a dedication ceremony of a new chronic disease and rehabilitation facility in Maine.

Mr. Fogarty places at the top of his predictions some action on federal construction aid to medical schools. The Rhode Island Democrat has his own bill on the subject, although there are others pending. Comments Mr. Fogarty: "... the shortage of health education facilities today is probably the most serious bottleneck in our whole medical system. . . . These schools . . . fall far short of accommodating the fully qualified and competent young men and women in America who are anxious to train and qualify in medical, dental and public health fields."

The record of the past several years has shown that no member of the House is listened to more carefully when it comes to health than Mr. Fogarty. His philosophy in the health field is worth noting: "It is now generally accepted that the health of our people is a major national resource and that the government, therefore, has a direct responsibility for the health of everyone."

Dr. McGuinness also spoke out strongly for federal aid to medical schools. Failure to meet the needs of the schools, he told his audience, would be "the worst kind of economy." He feels that the administration proposal for \$225 million in construction grants would bring classrooms and research laboratories "much closer to current and projected needs."

While neither man had any specific legislative proposals to make in the field, both foresee a growing role for hospitals in the practice of medicine. Dr. McGuinness put it this way: "General hospitals must broaden their services and achieve greater coordination. The term 'hospital care' should include not only bed care but diagnostic service as well as service to ambulatory patients."

Mr. Fogarty, looking ahead 25 years, said it was safe to predict that virtually every general hospital in the Nation will be providing at least as much preventive service as curative service. "You are, in fact, moving closer each moment to the day when hospitals will be the focal point of health services for all of us, throughout our entire lives."

The same day that Mr. Fogarty was urging the hospitals to use the basic Hill-Burton hospital construction program to meet future health needs, the American Hospital Association's House of Delegates approved a set of legislative proposals to present to the next session.

They would accomplish the following: (1) extend the act for five years beyond June, 1959, (2) authorize matching Hill-Burton funds for renovation and repairs of hospital plants, (3) set up loan authority so that hospitals not desiring grant money could borrow construction and renovation funds at very low interest rates (from 1½ to 2%). The house also urged a grants pro-

gram to hospitals with nursing schools and to other nurse institutions for professional education, exclusive of construction grants.

AFL-CIO To Fight Medical Society Actions

A firm stand against the actions of medical societies who fail to go along with union labor medical programs has been agreed upon by the AFL-CIO committee on social security, according to the Summer Newsletter issued by the Association of Labor Health Administrators. The ALHA is a group of medical directors, lay administrators and other representatives of union health center plans.

The publication calls for action on opposing the "attack and harrassment of component medical societies against union plans, particularly in the states of Pennsylvania, Illinois and Colorado." It states that at a meeting in Washington in May "at the merged headquarters" the AFL-CIO executive committee approved funds to encourage and promote the work of the ALHA in providing "technical aid to the trade union groups in development of better health service programs for the benefit of workers and their families." The letter also stated that the Association will "stand ready to bring experienced technical and legal counsel on request to the defense of the victims of any efforts on the part of medical power groups to destroy programs which endeavor to improve the quality and scope of prepaid health services available to working people and their families." The work will be carried out in cooperation with AFL-CIO through its department of social security.

The Newsletter used terms such as "medical power group," "fee-minded physicians" and "monopolistic elements of organized medicine" in referring to the recent actions taken by medical societies in Pennsylvania, Illinois and Colorado.

Health Insurance Coverage Continues To Grow

Voluntary health insurance against costs incurred through sickness and accident continues to spread its protective coverage over more and more Americans. The Health Insurance Institute, taking a forward look to year-end growth figures, predicts that by

December 31, 1957, over 123 million people in the U. S. will be protected by some form of health insurance designed to help pay hospital, doctor or other medical care bills. This represents close to 75 per cent of the total U. S. civilian population.

Breaking down the national totals on health insurance coverage for 1957, an estimated 109 million persons will be covered for surgical expenses, 74 million will have regular medical expense protection, 13 million will be insured against major medical expenses and 43 million for loss of income coverage, in addition to the 123 million protected against cost of hospital bills. Biggest growth in the type of coverage in recent years has been major medical expense insurance which helps to absorb the cost of serious, or catastrophic, illness.

Health insurance today covers more people than any other single type of insurance in force, the Institute reports.

Total health insurance benefits paid out this year by insurance companies, Blue Cross-Blue Shield and miscellaneous plans, will amount to an estimated \$4.2 billion, as compared to \$3.6 billion in 1956, the Institute said. This accounts for a major contribution to the nation's over-all medical bill.

The Health Insurance Institute is the central source of information for the nation's insurance companies, serving the public through voluntary health insurance.

How Would You Improve The American Medical Association?

If you were the president of the American Medical Association, what changes would you make in the way it is run? Five hundred physicians were recently asked to suggest the changes they would recommend under such circumstances. Questioned in a nation-wide survey, they most frequently called for closer ties with the individual physician and for further improvement in public relations.

Approximately one doctor in five thought the world's largest medical association should get closer to individual doctors, perhaps even poll their ideas on important subjects to get a more accurate indication of their thinking. A smaller number thought there should be a greater repre-

sentation of young physicians within the organization.

Improvement in public relations and public information was second in importance among the changes suggested. Concentration on these areas was deemed advisable by 14 per cent of the doctors consulted in the survey.

Social security or pensions for doctors were cited by 9 per cent. About 5 per cent requested liberalized hospital affiliation requirements, and nearly the same number suggested higher standards for practice. Approximately one out of 20 also thought improvements should be made in the Journal of the American Medical Association.

It was the opinion of 3 per cent of the participants that opposition to government medicine should be strengthened by the association, and 2 per cent called for elimination of fee-splitting. Only 2 per cent suggested increased postgraduate training. About one doctor in 10 thought the association needed no improvement.

MEDICAL NEWS IN TENNESSEE

Tennessee Valley Medical Assembly

The 5th annual Tennessee Valley Medical Assembly held one of its most successful meetings on September 30 and October 1st in Chattanooga, with nearly 1,000 physicians present to hear 18 noted medical authorities. Physicians from all parts of the Southeast were in attendance.

The speakers and their subjects were: Paul Dudley White, M.D., President American Heart Association, Boston, "Coronary Heart Disease in 1957"; Edith M. Lincoln, M.D., Adjunct Professor of Pediatrics, New York University, "The Treatment of Tuberculosis in Children"; J. Arnold Bagen, M.D., President of the Minnesota State Medical Association, Chairman of the Department of Gastroenterology of Mayo Clinic, "Regional Enteritis, Survival Rates, Recurrences and Present-Day Treatment"; Philip J. Hodes, M.D., Chief Consultant in Radiology, Veterans Administration for Pennsylvania, New Jersey, Delaware, Maryland, Ohio and West Virginia, "The Abuses of X-Ray Methods in Diagnosis"; Ernest B.

Howard, M.D., Assistant Secretary of the American Medical Association, Chicago, "National Issues Confronting Medicine"; Harold A. Sofield, M.D., Professor, Department of Orthopaedic Surgery, Northwestern University Medical School, "Common Conditions Causing Low Back Pain"; I. S. Ravdin, M.D., John Rhea Barton Professor of Surgery, University of Pennsylvania School of Medicine, Philadelphia, "Cancer of the Female Breast"; Joseph W. Kelso, M.D., Professor of Gynecology and Chairman of the Department of Gynecology of the University of Oklahoma Hospital, Oklahoma City, "Troublesome Problems in Office Gynecology"; Charles F. Geschickter, M. D., Professor of Pathology and Director of Laboratories of the Georgetown University Medical Center, Washington, D.C., "Differential Diagnosis of Asthmatic Disease and Therapy"; Frank B. Berry, M.D., Assistant Secretary of Defense, Health and Medical Dept., Washington, D. C.—"Responsibilities of the Medical Section of the Department of Defense"; Chevalier L. Jackson, M.D., Professor of Broncho-esophagology, Temple University, Philadelphia, "Cancer of the Larynx, Bronchi & Esophagus"; Harris B. Shumacker, Jr., M.D., Professor of Surgery and Chairman of the Department, Indiana University Medical Center, Indianapolis, "Present Status of Cardiac Surgery"; Willis J. Potts, M.D., Surgeon-in-Chief at the Children's Memorial Hospital and Professor of Pediatric Surgery, Northwestern Medical School, Chicago, "The Acute Abdomen in Children"; William Dameshek, M.D., Professor of Medicine, Tufts University School of Medicine, Senior Physician and Chief of Hematology, New England Center Hospital, Boston, "Leukemia"; Samuel A. Thompson, M.D., Associate Professor of Surgery, New York Medical College, "The Surgical Treatment of Coronary Disease and Myocardial Ischemias"; Warren H. Cole, M.D., Professor and Head of Department of Surgery, University of Illinois College of Medicine, Chicago, "Benign Lesions of the Gall Bladder and Bile Ducts"; Irving S. Cooper, M.D., Assistant Professor Neuro-surgery, New York University, Bellevue Medical Center, "The Alleviation of Parkinsonism and Juvenile Involuntary Movement Disorders by Chemopallidectomy"; Meredith Campbell,

M.D., Professor emeritus of Urology at New York University, consulting urologist to St. Francis Hospital in Miami Beach, "Chronic Urinary Infection in Infants and Children"; and Alexander Marble, M.D., Associate Professor of Clinical Medicine, Harvard Medical School, Boston, "Treatment of Diabetes Including the Place of Oral Hypoglycemic Agents."

Poison Control Center Established at U-T Research Hospital

The Tennessee Valley Academy of General Practice of Knoxville, on October 1, placed into operation a Poison Control Center in the Emergency Room of the University of Tennessee Memorial Research Center and Hospital at Knoxville. The objectives of this organization are to make available resources for the treatment of poisonings and to develop a better knowledge of the distribution, type and toxicity of various poisons. Available in the center are a complete stock of antidotes and equipment for treatment of any type poisoning. Also available is detailed information regarding the constituents, toxicology, and treatment for nearly all known substances. Physicians are welcome to use all the available facilities of the center, or may send their patients directly to the center for treatment. Consultant service by interested members is available continuously in the fields of pharmacology, bacteriology, chemistry, entomology, pesticides, etc. The Tennessee Valley Academy of General Practice has rendered a very valuable service to the Tennessee Valley area in sponsoring this center.

Medical Society to Cooperate in Polio Drive

The Smith County Medical Society has voted to cooperate with the Smith County Chapter of the National Foundation for Infantile Paralysis wherein it devoted the week of October 21-26 as Polio Vaccine Week. Injections of the Salk Polio Vaccine were given in all doctors' offices every day during the week.

American College of Physicians

The members of the College held its 1957 Regional Meeting on October 19, at the

Paris Landing Inn at Buchanan. The meeting was attended by 52 members and 9 guests. The program consisted of the following:

- "Essential Fructosuria," by Dr. Charles A. Rosenberg, Memphis.
- "Ochronosis: Report of Three Cases in Siblings," by Dr. Duval H. Koonce, Jackson.
- "Myoma of the Left Atrium," by Dr. Richard France, Nashville.
- "Acute Pericarditis as the Initial Manifestation of Infectious Mononucleosis," by Dr. Carl C. Gardner, Jr., Columbia.
- "The Functioning Carcinoid Syndrome—Case Report," by Dr. Phil E. Orpet, Jr., Memphis.
- "Radioisotopes in Clinical Practice," by Dr. Ben D. Hall, Johnson City.
- "A Case of Sarcoidosis: Diagnosis Possible Only by the Calcium Metabolism," by Dr. MacKinnon Ellis and Dr. Shelburne Wilson, Mountain Home.
- "Megaloblastic Anemia Associated with Anticonvulsant Therapy," by Dr. Robert C. Hartmann, Nashville.
- "Aplastic Crisis in Hemolytic Anemia," by Dr. A. P. Kraus, Memphis.
- "Case Reports of Aneurysms of the Renal Artery," by Dr. Phil B. Bleecker, Memphis.

The after dinner speaker was Dr. Chester M. Jones of Boston, Clinical Professor of Medicine, Harvard Medical School, and a Regent of the American College of Physicians. Greetings were brought from Kentucky members of the College by their Governor, Dr. Sam A. Overstreet of Louisville. Dr. William C. Chaney, of Memphis, Past Governor for Tennessee, and former Vice-President of the College made some remarks.

Tennessee Chapter of the American Society of Internal Medicine

On October 20, an organizational meeting was held at Paris Landing Inn, Buchanan, to establish a Tennessee Chapter of the American Society of Internal Medicine. At a later date it will apply to the national organization for membership. Officers elected were as follows: President, Dr. Laurence A. Grossman, of Nashville; President-Elect, Dr. Phil B. Bleecker, Memphis; and Secretary-Treasurer, Dr. Carl C. Gardner, Jr., Columbia.

University of Tennessee College of Medicine

Dr. James W. Culbertson, Professor of Medicine and Director of the Cardiovascu-

lar Research Laboratories at the State University of Iowa College of Medicine since 1949, will join the staff as Professor of Medicine.

★

Dr. William H. L. Dornette, Assistant Professor of Anesthesiology at the University of California Medical Center, Los Angeles, will become Professor of Anesthesiology, and Head of the Department.

★

Dr. G. Daniel Copeland, member of the resident staff of the City of Memphis Hospitals since 1955, has been appointed Frank W. Dugan Fellow in cardiology. The \$1,000 Fellowship was provided by the late Mrs. Anna R. Dugan, who gave \$20,000 to the University to support a fellowship for the study of cardiovascular disease.

PERSONAL NEWS

Drs. Geo. K. Carpenter, S. Benjamin Fowler, Don L. Eyler, Thomas F. Parrish, and Chas. M. Hamilton, of Nashville, announce the opening of their new office at 1919 Hayes Street. Practice is limited to orthopedic surgery.

Dr. Howard C. Robertson, Lewisburg, has announced the opening of his office in Lewisburg where his practice will be limited to pediatrics.

Dr. L. B. Molloy, Lawrenceburg, was the recent speaker before the Lions and Kiwanis Clubs.

Dr. Edward Hyder, currently of Chatom, Alabama, will be associated with **Dr. Earl Peterson** in the practice of medicine at Erwin, beginning about January 1st.

Dr. Samuel Binder and **Dr. Robert Hagood**, Chattanooga, were recent speakers before the Jewish Community Center's Woman's Auxiliary at Chattanooga.

Dr. Joseph W. Johnson, Jr., Chattanooga, recently spoke before the Chattanooga Area Historical Association. His subject was "The Old Stone Walls Found in the Southeast."

Dr. Mary E. Thompson, McMinnville, has resigned as Director of the Warren and White County health departments.

Dr. William David Brackett, has announced the opening of his office for the practice of medicine at 5502 Brainerd Road, Chattanooga.

Dr. William Card and **Dr. Robert Adams**, both of Nashville, were recent speakers before the Middle Tennessee Chapter of the American Academy of General Practice.

Dr. James C. Overall, Nashville, has been named president-elect of the American Academy of Pediatrics.

Dr. James W. Polk, Union City, has been elected president of the medical staff of the Obion County General Hospital. He succeeds **Dr. J. Kelly Avery** of Union City. **Dr. William N. Carpenter** was elected vice-president.

Dr. Perry M. Huggin, Knoxville, has been named president of the Southern Tuberculosis Conference.

Dr. Robert H. Haralson, Jr., has accepted the Chairmanship of the Professional, Government and Minister's Division of the United Fund-Red Cross Appeal, at Maryville-Alcoa.

Dr. Donald Connell, Bells, has discontinued his practice to enter the U. S. Air Force.

Dr. R. B. Turnbull, Memphis, has been named president of the Southern Trudeau Society.

Drs. E. P. Muncy and Roy Hendrix, Jefferson City, were recent speakers at the annual meeting of the Tennessee Heart Association held in Nashville.

Dr. Peter W. Koenig announces the opening of his office for the practice of medicine in Obion.

Dr. Margaret E. Horsley, Madison, has returned to her practice after an absence of 2 years. She will specialize in diseases of the eye.

Dr. Wesley H. Stoneburner, Chattanooga, was the recent speaker on the television show entitled "Your Doctor Speaking."

Dr. Paul Edward Whittemore, announces the opening of his office in Fayetteville for the practice of medicine and surgery, where he will be associated with **Dr. T. A. Patrick, Jr.**

Dr. R. C. Kimbrough, Madisonville, recently received a special attendance award at the 42nd International Scientific Assembly of the Interstate Postgraduate Medical Association meeting in Chicago.

Dr. B. J. Keebler has joined the staff at Laughlin Clinic in Greeneville.

Dr. Edwin E. Hines, Millington, announces the opening of his office for the practice of medicine at the Alta Vista Clinic.

Dr. Harris D. Riley, Jr., Nashville, has been named chairman of the department of pediatrics at the University of Oklahoma School of Medicine, Oklahoma City.

Special recognition was recently given to three Bradley County physicians by the Bradley County Chapter of the National Foundation of Infantile Paralysis. They were: **Drs. William A. Garrett, Marvin A. Bachelor, and Wesley Barton.**

Dr. F. L. Roberts, Memphis, associate dean of the University of Tennessee School of Medicine, was a recent speaker at the Rotary Club in Trenton.

Dr. William H. Marsh, Chattanooga, has announced the opening of his office at 105 Interstate Building for the practice of general surgery.

Dr. Edward Roberson, McMinnville, has moved to establish his practice in Houston, Texas.

Dr. William B. MacGuire, Jr., Chattanooga, recently spoke on the subject "Parkinson's Disease" on a local television broadcast.

Dr. I. Frank Tullis, Memphis, was a recent speaker before the East Tennessee Heart Association. His subject was "Today's Challenge in Heart Disease."

The following physicians were honored by the University of Tennessee School of Medicine on the 50th anniversary of their graduation from the University. They were: **Dr. Fred A. Martin**, Cumberland City; **Dr. Bernard H. Woodard**, Spring Hill; **Dr. William F. Fessey** and **Dr. George H. Harding, Jr.**, Nashville.

Dr. Fred A. Rowe has joined Doctors Sullivan, Lyle and Driver in the practice of ophthalmology, in the Doctors Building, Nashville.

Dr. Thomas Guv Pennington has opened his office for the practice of internal medicine in Nashville.

Dr. Swan Burrus, Jr., of Jackson, was elected a Fellow of the American College of Surgeons at the annual meeting in Atlantic City.

Dr. Alvin J. Cummins, Memphis, has been elected to membership in the Central Society for Clinical Research.

BOOK REVIEW

Orthopedic Surgery in the European Theater of Operations. Surgery in World War II. Published by the Medical Department, United States Army. 353 pages. Washington, D. C.: Department of the Army, 1956.

Orthopedic Surgery in the Mediterranean Theater of Operations. Surgery in World War II. Published by the Medical Department, United States Army. 341 pages. Washington, D. C.: Department of the Army, 1957.

The principles of the practice of orthopedic surgery under military conditions are completely, succinctly, and adequately portrayed in these volumes. They are presented in a highly readable fashion. This book has a place in the library of most general surgeons and all orthopedic surgeons, and one may hope that young men who may be called upon as medical officers in another world conflict will read and assimilate the principles of orthopedic surgery as related to combat injuries. Had this book been published prior to the Korean conflict many surgeons could have performed an even greater service. It is regretted that the book appears so many years after World War II. Dr. Hampton recounts in the preface that the lessons of World War I had, in large measure, to be learned again in World War II. May I state that the lessons of World War II had to be relearned again during the Korean War, but due to the competence of the orthopedic consultant in this theater they were learned much quicker and applied more completely. This is an excellent book and should be widely read and studied.

Men injured in combat must be treated somewhat differently from those encountered in civilian

practice for many reasons which are immediately apparent. The absolute necessity for thorough debridement of all wounds of the extremities is brought out and amply illustrates the value of the procedure of delayed primary closures in which the wound is closed 3 to 10 days after the initial debridement. The discussion of hip and knee joint open fractures is excellent and is required reading for any military surgeon.

THOMAS F. PARRISH, M.D., Nashville.



Oral Histology and Embryology. Edited by **Balint J. Orban, Loyola University, School of Dentistry, Chicago. Fourth Edition, 364 pages, 269 illustrations. St. Louis: The C. V. Mosby Company, 1957. Price \$9.00.**

The fourth edition of this text brings up to date one of the standard works in the field of Oral Histology and Embryology. Electron microscopy and histochemistry are contributing new information in regard to the structure of teeth and supporting tissues. The author has included this material.

Attention is called to Chapter XIII on the Temporal Mandibular Joint by Donald A. Kerr and Chapter XIV on the Maxillary Sinus by Paul C. Kitchin and L. F. Edwards.

The text is extremely well illustrated and handsomely bound in green, black and gold.

Written primarily for dental students, this work is an excellent reference for the physician interested in the growth and development of the structures in, and related to the oral cavity.

F. M. MEDWEDEFF, D.D.S., Nashville

ANNOUNCEMENTS

Arrange Cancer Film Bookings Through AMA

Hope in the thought that 75,000 lives in America need not be lost needlessly to cancer each year is the theme of a dramatic educational film recently added to the AMA Film Library. Titled "The Other City," the film stresses the encouraging fact that doctors currently are saving one in three patients as compared with a previous one-in-four ratio. Setting of the film is Racine, Wisconsin. Four basic thoughts are developed: (1) Racine empty and lifeless; (2) a symbolic representation of what cancer is; (3) how the 75,000 inhabitants of this token city could have helped save themselves, and (4) Racine alive and bustling.

Produced by the American Cancer Society, the 16mm color film runs 22 minutes and 30 seconds. It is suitable for showings on local television as well as for civic, school and other gatherings. County Medical Societies may book the film

through the AMA Film Library by writing to the AMA, 535 North Dearborn Street, Chicago 10, Illinois.

Physicians Newly Licensed in Tennessee

The following physicians have been licensed to practice medicine in the State of Tennessee:

Beard, John C., Jr., Memphis
Roberson, Travis H., Jr., Dyersburg
Buchler, Hubert G., Columbus, Ohio
McKee, Lonnie C., Jr., Nashville
Slaton, Paul E., Jr., Nashville
Stone, Walter N., Madison, Wis.
Yancey, Charles R., Hopkinsville, Ky.
Cooper, Floyd C., III, Memphis
Flurkey, Emerson C., Harrisburg, Pa.
Gay, Charles E., Jr., Memphis
Pardue, Andrew M., Nashville
Turner, Ralph H., Los Angeles, Calif.
Kitchens, Howard H., Memphis
Meyer, Ernst J., Damascus, Va.
Gurney, Charles B., Oak Ridge
Magnan, Charles G., Jr., Kingston
Hickey, John M., Jr., Knoxville
Glass, Willard G., Mercedes, Tex.
Larson, John A., Nashville
Moore, Charles B., Madison College
Stecker, Donald C., Madison Sanitarium
Perkins, Richard L., Paris, Tex.
Golden, Billy N., Kingsport
Vick, Walter D., Columbus, Ga.
Wright, John H., Jr., Nashville
Crawford, Ben W., Camden, Tenn.
Yerbury, Charles C., St. Petersburg, Fla.
McCall, Roy A., Sevierville

New Medical Journal for 1958

The American Rheumatism Association announces the forthcoming publication of a new medical journal—"ARTHRITIS AND RHEUMATISM; The Official Journal of the American Rheumatism Association." Grune & Stratton, Inc., New York, will be the publishers.

The Journal will cover the field of connective tissue disorders, in particular rheumatoid arthritis, osteoarthritis, rheumatic fever, gout, the so-called "collagen diseases," and nonarticular rheumatism. In the choice of original articles it is hoped to achieve an optimal balance between papers relating clinical experience and those which report pertinent developments in the basic sciences, such as immunology, biochemistry, pathology, and pharmacology. The contents of the Journal should interest not only the specialist in rheumatic diseases, but also the internist, orthopedic surgeon, research worker, and all practitioners with a special interest in these diseases.

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Editor, ARTHRITIS AND RHEUMATISM

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This paper serves a most useful purpose in considering hysterectomy as done in a private and non-university type of hospital. This is especially true since over half of the operations were done by general surgeons.

HYSTERECTOMY—A FIFTEEN-YEAR SURVEY AT ST. JOSEPH'S HOSPITAL*

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In 1953, a rather laborious survey of the records of 1,587 cases of hysterectomies done in this hospital in the 10 year period, from January 1, 1942, through December 31, 1951, did not reveal anything particularly startling. That is, it did not reveal anything that we do not already know or at least strongly suspected. It is not the purpose of a study of this type to bring forth amazing new facts. It has as its basis the dictums, "hindsight is better than foresight," and "to err is human," but to not profit by our mistakes is a definite step backward instead of forward. The study we are now reporting is a survey of the records in an additional 1,587 hysterectomies, or every hysterectomy done in this hospital for benign disease between January 1, 1952, and December 31, 1956. The entire period now covered in the survey is from January 1, 1942, through December 31, 1956, a 15-year period, giving a total of 3,174 hysterectomies.

The gynecologic literature of the past few years is abundant with articles and studies on hysterectomy. In fact, so much has been written and said on the subject at the meetings of the various societies of the specialty that when someone gets up to talk on hysterectomy, one feels like heading for the nearest exit. However, the majority of these studies came from institutions with closed staffs or teaching institutions where all of the hysterectomies are done by a limited number of gynecologists. There are few, if any, reports on what is being done in institutions like St. Joseph, a small

private general hospital where a large number of general surgeons do more than 50 per cent of the hysterectomies. It is of interest and importance to note how their methods, technic, indications, morbidity and mortality compare and conform with those of men who devote their entire attention to this field.

A survey of this sort from St. Joseph should be of particular interest because of the rather unique situation that exists in this hospital,—that is, 55 per cent of the hysterectomies in the past 5 years were done by a wide variety of general surgeons, while 45 per cent were being done by, or under the direct supervision of a small group of Board qualified gynecologists who supervise and conduct a 3 year approved resident training program in obstetrics and gynecology. This affords an excellent opportunity to observe the value, benefit and influence of a good resident training program upon the caliber of work in the hospital as a whole. I believe the statistics that we will give here will bear out the contention that the influence is a good one, and well worth while.

Incidence

First, let us consider the incidence of hysterectomy. The records show that it is probably the most frequently performed of all major surgical procedures, other than appendectomy. A quick review of a few slides from our first 10 year survey will bear this out. Table 1 shows that over the 10 year period there were 25,519 major operations, of which 1,587 (or 6.5 per cent) were hysterectomies; one in every 16 major

*Read before the meeting of the Tennessee State Medical Association, April 9, 1957, Nashville, Tenn.

Table 1

INCIDENCE OF HYSTERECTOMY, ST. JOSEPH'S HOSPITAL, JAN. 1942-DEC. 1952
INCIDENCE OF HYSTERECTOMY (1942-1952) AS PER CENT OF ALL (A) MAJOR SURGICAL OPERATIONS, (B) MAJOR SURGICAL OPERATIONS IN WOMEN, (C) MAJOR GYNECOLOGIC OPERATIONS

Year	Hysterectomies	Major Operations		Major Operations in Women		Major Gynecologic Operations	
		Total	Per Ccn Hysterectomies	Total	Per Cent Hysterectomies	Total	Per Cent Hysterectomies
1942	88	1,975	4.5	1,129	7.8	406	21.7
1943	161	2,495	6.5	1,525	10.5	577	29.6
1944	122	2,835	4.0	1,800	6.7	671	18.2
1945	134	2,363	5.5	1,466	9.1	602	22.2
1946	130	2,710	4.7	1,601	8.1	660	19.7
1947	146	2,528	5.5	1,407	10.4	582	25.0
1948	139	2,424	5.2	1,398	9.9	549	25.3
1949	203	2,632	7.7	1,445	14.0	564	35.9
1950	210	2,759	7.6	1,535	13.7	541	38.8
1951	254	2,798	9.0	1,689	15.0	673	37.7
Totals	1,587	25,519	6.2	14,995	10.5	5,825	27.2

operations was a hysterectomy. One of every 10 major operations in women, and one of every 4 major gynecologic operations was a hysterectomy. (Table 1.)

In the 5 year period of the present study, January 1, 1952, through December 31, 1956, we see in Table 2 a tremendous increase in

Table 2

INCIDENCE OF HYSTERECTOMY (1952-1956) AS PER CENT OF ALL MAJOR SURGICAL OPERATIONS

Year	Hysterectomy	Major Operations	
		Total	Per Cent Hysterectomy
1952	296	2,887	10.2
1953	360	2,484	14.5
1954	353	2,446	14.4
1955	320	2,488	12.8
1956	258	2,606	9.9
Total	1,587	12,911	12.3

the incidence of hysterectomy. In this 5 year period there were 1,657 hysterectomies, of which 70 were done in conjunction with treatment for cancer of the cervix, corpus of the uterus, the ovary, and, in a few cases, even of the rectum. When these 70 cases are subtracted, since they do not apply to our present study, it is seen that 1,587 hysterectomies were done for benign disease. In other words, by a remarkable coincidence, the exact number of hysterectomies were done in the past 5 years as were done in the previous 10 years, namely 1,587, making a total of 3,174 in the past 15 years.

It was at first assumed that this tremendous increase in the incidence of hysterectomy was due, at least in part, to an overall increase in the amount of surgery done in the hospital. However, this hypothesis is incorrect, since, as shown in Table 2, there was a slight decrease in the annual

total of major surgical procedures in the last 5 years. At this point, we encounter one of the problems of keeping records, and these figures, though generally correct, must be taken with reservations. We do not know what criteria were used to define a MAJOR surgical procedure. It is entirely possible that a different observer in 1952 followed a more rigid definition to account for a slight decrease beginning with that year.

In spite of such a possible factor, it is quite apparent that there has been a tremendous increase in the incidence of hysterectomy in the past 5 years. This increase must be attributed largely to a changing philosophy regarding the indications for hysterectomy, with liberalization of these indications as we shall see in a few moments.

It is obvious that these tables convincingly bear out our statement that hysterectomy is one of the most commonly performed of all major operations, and it therefore behooves us to know all that we possibly can about this operation from every standpoint.

Gynecologic Objectives

As shown in Table 3, the majority of hysterectomies performed at St. Joseph's Hospital during the past 5 years were done by men whose major interests are not concentrated on gynecologic surgery. Of the 1,587 hysterectomies performed, 867 (or 54.6 per cent) were done by 58 general surgeons; 500, (or 31.5 per cent) of the 1,587 hysterectomies were done by 17 Board-qualified gynecologists, and the remaining 220 hysterectomies (13.8 per cent), were done by the

gynecologic residents under the direct supervision of 13 of the Board-qualified men. Thus, by grouping the two latter groups together, 720 (or 45.4 per cent) of the hysterectomies were done or supervised by gynecologists.

Table 3

TYPE OF SURGEON PERFORMING HYSTERECTOMY AT
ST. JOSEPH'S HOSPITAL
JANUARY 1, 1952 THROUGH DECEMBER 31, 1956

Year	General Surgeons	Obst.-Gynec. Surgeons	Service
1952	159	97	40
1953	189	123	48
1954	219	93	41
1955	155	114	51
1956	145	73	40
Total	867 (54.6%)	500 (31.5%)	220 (13.8%)

Since slightly more than half (54.6 per cent) of the cases were done by men whose major interests are not concentrated on gynecologic surgery, we feel justified in calling the attention of the general staff to certain newer trends in hysterectomy, as suggested and practiced by gynecologic authorities during the past few years.

In the original 1953 study of the first 10 years of this survey, it was stated that the more salient features of the misconceptions regarding hysterectomy, to which we have previously alluded, were to be summarized as follows:

(1) A lack of appreciation of the advantages of total over subtotal hysterectomy;

(2) The failure to recognize and restore the normal supportive structures of the uterus, cervix and vaginal vault, where necessary; and

(3) The hesitancy to take advantage of technics for vaginal hysterectomy, particularly where vaginal plastic surgery should accompany hysterectomy.

Total Hysterectomy

The lack of appreciation of the advantages of total over subtotal hysterectomy.

In 1953, it was pointed out that this was no longer a moot question, and the present day opinion was expressed in a very few words: *Total hysterectomy should always be done where hysterectomy is indicated except in those unusual cases where doing a total operation would jeopardize the patient's life*

and thus outweigh the advantages of the total operation. It was pointed out even then that first rate institutions throughout the country reported an incidence of less than 5 per cent for *subtotal* hysterectomy.

The advantages of *total hysterectomy* over the subtotal procedure were summarized as follows:

(1) The total procedure includes removal of the cervical stump, which is frequently diseased. Many symptoms for which subtotal hysterectomy is done persist after operation, and are relieved only after subsequent operation for removal of the cervical stump.

(2) The second reason for a preference of total hysterectomy is, of course, the possibility of carcinoma developing in the cervical stump. One-third of all carcinomas in women occur in the uterus, and 90 per cent of these are in the cervix. It has been shown that 6 per cent of all deaths resulting from cancer of the cervix are in cervical stumps.

In spite of these good and valid reasons for the preference of the total operation, many have still argued that the total operation is more difficult, carries higher morbidity and mortality rates, and, further, that it shortens the vagina and predisposes to dyspareunia and sexual difficulties. All of these arguments have been proven invalid and without foundation. The advantages of the total operation were clearly demonstrated, and the disadvantages, for the most part, contradicted. Therefore, any surgeon who does a hysterectomy is obligated to familiarize himself with the technic of the total operation, on the same basis that the surgeon who undertakes cholecystectomy should be able to remove a stone from the common duct, or abandon the procedure of cholecystectomy.

The Tulane Service of Charity Hospital in New Orleans has had, since 1950, an extreme attitude with a rule that subtotal hysterectomy cannot be done, and not a single one has been done since 1952, yet its morbidity and mortality rates are among the lowest in the world, despite being an institution like our own John Gaston Hospital, with a high percentage of pelvic inflammatory disease.

Table 4 indicates the numbers and per-

centages of the various types of hysterectomy done in the past 15 years by all surgeons. It can readily be seen that the pic-

Table 4

TYPE OF HYSTERECTOMY PERFORMED AND PERCENTAGE

Year	Total Cases	Abdominal		Vaginal		Subtotal	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
1942	88	5	5.7	4	4.5	79	89.7
1943	161	10	6.0	5	3.1	146	90.7
1944	122	10	8.2	11	9.0	101	83.6
1945	134	12	8.9	13	9.6	109	81.4
1946	130	19	14.6	7	5.4	104	80.0
1947	146	8	5.4	12	8.2	126	86.3
1948	139	28	20.1	9	6.4	102	73.4
1949	203	42	20.6	35	17.2	126	62.1
1950	210	47	22.4	29	13.8	134	63.8
1951	254	110	43.3	43	16.9	101	40.0
Total	1,587	291	18.3	168	10.6	1,128	71.6
1952	296	141	47.6	80	27.0	75	25.3
1953	360	203	56.4	105	29.2	52	14.4
1954	353	221	62.6	78	22.1	54	15.3
1955	320	171	52.2	115	35.1	34	10.4
1956	258	145	56.2	83	32.1	30	11.6
Total	1,587	881	56.1	461	29.1	245	15.4
Combined							
Total	3,174	1,172	36.9	629	19.8	1,373	43.2

ture has changed from that of the previous 10 years. Subtotal hysterectomy has dropped from 90 per cent in 1943 to 15.4 per cent for the entire past 5 year period. Figure 1 tells the story much better than words. There was a gradual decline in subtotal hysterectomies from 90 per cent in 1942-1943, but in 1951 there was a precipitous drop in the number of subtotal operations until, in 1956, it was about 11 per cent. The percentage of total abdominal hysterectomy and vaginal hysterectomy has risen proportionately and coincident with the drop in the subtotal procedures.

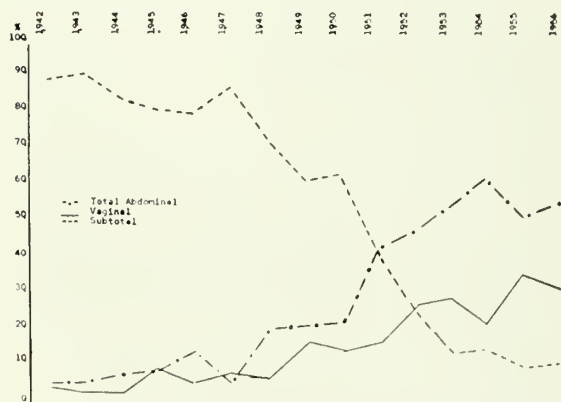


FIG. 1. Percentage of Total Abdominal, Vaginal and Subtotal Hysterectomies at St. Joseph's Hospital, January 1, 1942 through December 31, 1956.

In spite of this beautiful record of improvement, we have not reached the ideal plateau of less than 5 per cent subtotal hysterectomies, but when one considers this as an overall picture, including a few men who still do the subtotal operation routinely, the progress has been remarkable. I believe we have accomplished the aim set forth in the first point of the advantages of total over subtotal hysterectomy. I would again like to reiterate that credit for this achievement in a hospital of our type can be largely attributed to a resident training program.

Gynecologic Procedures Accompanying Hysterectomy

Now let us turn our attention to the real aim of this last 5 year analysis,—to show the necessity for attention to the last two points of our three-point contention, namely:

- (1) To point out the failure to recognize and restore, where necessary, the normal supportive structures of the uterus, cervix and vaginal vault; and
- (2) To point out the hesitancy to take advantage of the newer technics of vaginal hysterectomy, particularly where repair work is indicated.

That there is already a trend toward the accomplishment of these ends is also illustrated in figure 1. You will note the gradual rise in the incidence of vaginal hysterectomy to well over 30 per cent in 1956, around which level it has stabilized for the past 5 years. This figure is about the average or even a little above that for hospitals staffed by gynecologists; it is, in fact, far above that of any reports which I have seen submitted by small private general hospitals similar to St. Joseph's Hospital.

Table 5 indicates the various types of hysterectomy done by general surgeons, gynecologists and the gynecologic service in the past 5 years. Although they are broken down separately, the obstetric-gynecologic private cases and service cases have also been combined because actually policy is the same in the two groups and comparison can be made with the general group in which there is a wide divergence of policy.

Table 5
TYPE HYSTERECTOMY DONE ACCORDING TO SURGEON

	Year	Total Hysterectomy		Subtotal Hysterectomy
		Abdominal	Vaginal	
General Surgeons	1952	82	11	66
	1953	119	20	50
	1954	150	17	52
	1955	106	20	29
	1956	102	17	26
		559	85	223
		(63.4%)	(18.4%)	(91%)
Gynecologists	1952	40	48	9
	1953	60	61	2
	1954	55	36	2
	1955	51	58	5
	1956	33	38	2
		239	241	20
		(27.1%)	(52.2%)	(8.2%)
Service Cases	1952	19	21	0
	1953	24	24	0
	1954	16	25	0
	1955	14	37	0
	1956	10	28	2
		83	135	2
		(9.4%)	(29.2%)	(0.8%)
Obst.-Gynec.		322	376	22
Combined and Service		(36.3%)	(81.5%)	(8.9%)

The general surgeons did 63.4 per cent of the total abdominal hysterectomies, whereas the gynecologists did 27.1 per cent and the residents only 9.4 per cent. The preponderance of general surgeons doing total abdominal hysterectomies is explained to a large extent when we look into the vaginal hysterectomy column where we find that only 18.4 per cent of the vaginal hysterectomies were done by the general surgeons, whereas 52.2 per cent were done by the Obstetric-gynecologic surgeons, and 29.2 per cent by the gynecologic residents. In other words, 81.5 per cent of the vaginal hysterectomies were done by the gynecologists. Thus, in many of the total abdominal hysterectomies done by general surgeons, the vaginal route would probably have been selected by the gynecologists.

In the column of subtotal hysterectomies it will be seen that 91 per cent of these are being done by general surgeons, but may I emphasize that this is not a reflection on the group of general surgeons as a whole. Most general surgeons, if their records were analyzed separately, would be found to be conforming to the trend against subtotal hysterectomy, but their overall percentage is spoiled because of the persistence of a few in doing this type routine operation. Of the 245 subtotal hysterectomies in the

past 5 years, only 39.2 per cent included conization.

Figure 2 beautifully illustrates the effects of this enthusiasm for vaginal hysterectomy; it graphically shows the types and percentages of hysterectomy done by the gynecologists and the residents in gynecology during the past 5 years. Thus, over 60 per cent were by the vaginal route.

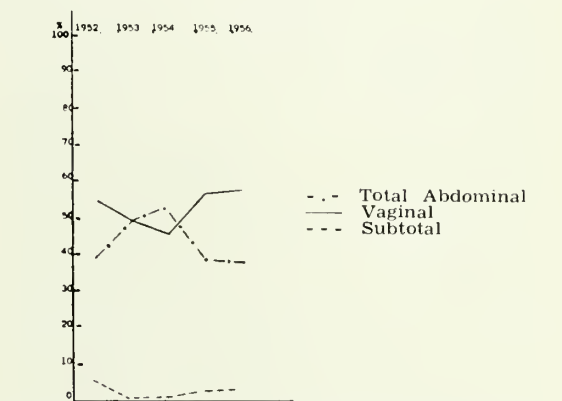


FIG. 2. Percentage of Total Abdominal, Vaginal and Subtotal Hysterectomies by Obstetric-Gynecologic Surgeons and Obst.-Gynec. Service.

One may well ask, is this trend justified? Should the majority of uteri be removed by way of the vagina or through an abdominal incision? The gynecologic staff apparently feels that the former route is the preferable. This is neither the time nor the place to go into all of the pros and cons concerning vaginal hysterectomy. We are of the opinion that total abdominal hysterectomy and vaginal hysterectomy are not competitive operations, and that they both have their place; however, it has been shown that the more experienced we become in vaginal hysterectomy, the greater are its applications. For example, at the beginning of the vaginal hysterectomy era, complete prolapse of the uterus, or procidentia, was the prime indication for this procedure. Even today, the inexperienced or uninformed will tell you the same. It is true that vaginal hysterectomy with the appropriate repair and reconstructive work is the best method for treating prolapse, but it is by no means the only indication for this operation. In fact, we feel that it is much easier to do a vaginal hysterectomy in the absence of prolapse than it is when prolapse exists. The reason for this is that although the uterus is easier to

amputate and remove with prolapse, actually the operation has only begun when the uterus is out, because we must then turn our attention to correction of the defects in the supporting structures that caused the prolapse in the first place. If this is not done, one has only substituted a prolapsed vagina for a prolapsed uterus.

Vaginal hysterectomy is now done for a wide variety of indications. Those who are familiar with its technic and who have had wide experience do as many as 75 per cent of their hysterectomies by the vaginal route and include large fibroids, pelvic inflammatory disease, etc. It would be impossible to set forth on paper all of the indications for vaginal hysterectomy, because they would depend on the surgeon. That which would be an indication for a skilled and experienced surgeon might be a contraindication for one with less skill and experience.

Our study brings out the fact that in the hands of the average operator, vaginal hysterectomy is most frequently done in conjunction with some type of repair,—cystocele, rectocele, enterocele, or prolapse. There is general agreement that repair work is more readily and efficiently accomplished if the uterus is removed by the vaginal route at the time of repair. Everyone will agree that to do repair work from below and then go above to do the hysterectomy is a long tedious procedure, and apparently is avoided by both general surgeons and gynecologists alike. As a result of this, I am convinced that many women who need a repair are neglected when the operation is done from above. This conclusion is reached from a study of tables 6 and 7. In table 6, 1,293 patients with recorded parity had 3,738 children, an average of 2.9 children per patient. Broken down into types of hysterectomy, it is seen that the 702 patients who had total abdominal hysterectomy had 1,588 children, or 2.3 per hysterectomy. The 388 vaginal hysterectomies with recorded parity had 1,737 children, for an average parity of 4.5 per patient, and the 203 subtotals had 413 children, for an average parity of 2.

It is obvious, first of all, that the 1,587 uteri removed for benign disease, regardless of route, had served their purpose of

Table 6

PARITY AT TIME OF HYSTERECTOMY (1952-1956)	
Total number hysterectomies	1,587
Parity not recorded	294
Total number patients with recorded parity	1,293
Total number children	3,738
Average parity at time of hysterectomy	2.9 Per Patient

	Total Hysterectomy Abdominal	Vaginal	Subtotal Hysterectomy
Number patients	702	388	203
Number children	1,588	1,737	413
Average parity	2.3	4.5	2

childbearing to a fairly good extent. However, in spite of the miracle of reproduction and the perfection of nature in accomplishing it, there seems to have been somewhat of a "slip-up" insofar as the ability of the female reproductive tract to withstand the trauma of childbirth is concerned. We all know that a large percentage of women who have delivered 2 or 3 children, and particularly those having had 3 or more, need some type of repair work. From a glance at table 7, it is obvious that whether the operator was a gynecologist or a general surgeon, repair work was neglected when the abdominal route was chosen, since only 9.1 per cent had any repair work. Yet, when the vaginal route was used, 95 per cent had repair work.

Table 7

REPAIRS WITH HYSTERECTOMY (1952-1956)				
		Number Cases	Repairs	Percentage Of Repairs
General Surgeons	Hysterectomy			
	Total Abdominal	559	51	9.1
	Vaginal	85	80	94.1
	Subtotal	223	27	12.1
Obstetric-Gynecologic Surgeon	Total Abdominal	239	22	9.1
	Vaginal	241	230	95.4
	Subtotal	20	2	10.0
Obst.-Gynec. Service	Total Abdominal	83	12	14.4
	Vaginal	135	134	99.2
	Subtotal	2	0	0.0

Granting that the parity of the vaginal hysterectomies was 4.5 per patient, it is still apparent that many of the abdominal hysterectomies must have needed repair work which was not done. The women with 4 or 5 children, or more have obvious cystoceles, rectoceles, prolapse, or enteroceles. Women with parity of 2 or 3 are likely to have less obvious ones which, if neglected at the time

of hysterectomy, become more pronounced as tissue tonicity is lost with advancing age, and correction then presents much more serious problems, particularly after the uterus is out.

In table 8, we see that by far the greatest number of hysterectomies are done between the ages of 30 and 50, and that the majority of these are abdominal hysterectomies. However, past the age of 55, vaginal hysterectomy is in the majority.

Table 8

AGE OF PATIENTS AT TIME OF HYSTERECTOMY
(1952-1956)

Age	Total Abdominal	Vaginal	Subtotal
20-24	19	1	8
25-29	68	19	17
30-34	146	69	40
35-39	187	87	45
40-44	179	70	66
45-49	170	56	51
50-54	54	46	15
55-59	20	32	3
60-64	19	34	0
65-69	9	20	1
70-74	2	9	2
75-79	1	4	0
80-84	0	1	0
85-89	0	2	0

This tendency to reserve vaginal hysterectomy for the later years is rapidly being reversed. More and more vaginal hysterectomies are being done in the younger age groups, and this is in step with the changing philosophy and liberalization previously mentioned in regard to the indications for hysterectomy.

In table 9, you will note the indications, as far as could be ascertained, for the hysterectomies, and, in table 10, the pathologic lesion found in the removed uteri. There was a wide variety of indications in a large percentage of the hysterectomies, and it is apparent that in many cases more than one existed. In other words, it seems that more uteri are being removed for reasons which formerly would have resulted in what was erroneously called "conservative measures." These "conservative" measures consisted of suspension, lysis of adhesions, removal of a part of an ovary or a tube, radiation therapy for severe functional bleeding, etc. The first steps toward this began, I believe, with functional bleeding when certain surgeons removed uteri in women late in the child-bearing period, or later, when they did not

respond to the usual hormonal measures. Formerly, many of these women received X-ray and radium therapy to control their bleeding. Very few will deny that a properly performed hysterectomy is the superior method of treatment for the majority of these cases.

Table 9

PREOPERATIVE DIAGNOSES AND COMPLAINTS IN 1,587
INSTANCES OF HYSTERECTOMY (1952-1956)

	Number	Per Cent
Bleeding	724	45.6
Fibroids	661	42.3
Pain	369	23.3
Lesions of Cervix		
Chronic cervicitis	413	26.0
Intra-epithelial cancer cervix	82	5.2
Possible cancer cervix	33	2.0
Cervical polyp	30	1.8
Stenosis cervix	29	1.8
Laceration cervix	19	1.2
Relaxations		
Cystocele and rectocele	225	14.2
Cystocele, rectocele, prolapse	221	14.1
Rectocele	109	6.8
Cystocele	63	3.9
Prolapse	66	4.1
Stress incontinence	100	6.3
Enterocoele	7	0.4
Bladder and urinary tract symptoms	48	3.0
Fallopian tubes—salpingitis	107	6.7
Pelvic inflammatory disease	146	9.1
Ovarian Lesions		
Ovarian cyst	202	12.7
Ovarian tumor or mass	49	3.0
Oophoritis	30	1.8
Carcinoma ovary	4	0.2
Pelvic Mass	25	1.5
Endometriosis	83	5.2
Adenomyosis	16	1.0
Retrodisplacements uterus	101	6.3
Subinvolution uterus	21	1.3
Cancer endometrium	48	3.0
Endometrial hyperplasia	15	0.9
Complications of Pregnancy		
Ruptured pregnant uterus	5	0.3
Placental polyp	2	0.1
Premature separation placenta	3	0.2
Retained placenta	1	0.06
Previous caesarian section	2	0.1
Postpartum hemorrhage	3	0.2
Incomplete abortion	3	0.2
Ectopic pregnancy	7	0.4

Probably the greatest factor in the increased incidence of hysterectomy is the advent of the so-called "combined syndrome." This is an excellent term, coined by Dr. Lamon Gray at the University of Louisville, describing a patient usually between 35 and 45 years of age, with a combination of symptoms and findings such as chronic cervicitis, retroversion of the uterus, small myomas, subinvolution, fibrosis, adenomyosis, profuse and prolonged menstruation, or irregular menstruation with intermenstrual bleeding,

Table 10

PATHOLOGIC FINDINGS IN REMOVED UTERI IN 1,587 INSTANCES (1952-1956)

Pathologic Lesions	Number	Per Cent
Fibroids	597	37.6
Cervical Lesions		
Cervicitis	1,266	79.7
Cervical polyps	33	2.0
Epidermidization cervix	50	3.1
Cervical stenosis	9	0.5
Intra-epithelial cancer	48	3.0
No residual intra-epithelial cancer of cervix	38	2.3
Squamous metaplasia cervix	25	1.6
Tubal Lesions		
Salpingitis	639	40.3
Hydrosalpinx	42	2.6
Hematosalpinx	6	0.3
Pyosalpinx	4	0.2
Tuboovarian abscess	9	0.5
Ovarian Lesions		
Follicular cysts	425	26.4
Lutein cysts	385	24.2
Dermoid cyst	10	0.6
Ovarian cyst	22	1.4
Papillary tumor	30	1.9
Benign fibropapillary adenoma ovary	8	0.4
Fibroma ovary	6	0.3
Oophoritis	61	3.8
Uterine Lesions		
Secretory endometrium	812	51.0
Proliferative endometrium	290	18.2
Atrophic endometrium	254	16.0
Endometrial hyperplasia	128	8.0
Focal adenomatous hyperplasia endometrium	2	0.1
Endometrial polyp	117	7.3
Endometritis	7	0.4
Adenomyosis	82	5.1
Infantile uterus	2	0.1
Subinvolution uterus	4	0.2
Bicornuate uterus	3	0.1
Placental tissue	9	0.5
Decidual reaction endometrium	2	0.1
Placental polyp	4	0.2
Couvellaire uterus	1	0.06
Ruptured postpartum uterus	4	0.2
Uterine pregnancy	3	0.1
Cornual pregnancy	4	0.2
Ectopic pregnancy	8	0.4
Endometriosis	64	4.0

and positive complaints including discharge, dysmenorrhea, dyspareunia, low backache, and bearing down and heaviness in the pelvis. These are not single enumerations but are multiple—a “combined syndrome” of physical findings and symptoms.

A glance at tables 9 and 10 again will show

that a large percentage of our hysterectomies were done obviously for combinations of these indications. In the parous woman, particularly with cystocele and rectocele, or even a slight prolapse, vaginal hysterectomy and repair offers an excellent method of relief.

Vaginal hysterectomy is also an excellent procedure in nulliparous women who must have a hysterectomy done for bleeding, small myomas and other reasons. These, as we have indicated, may be extended according to the enthusiasm and experience of the operator.

We have tried to point out the advantages and indications for vaginal hysterectomy, but I do not feel we can leave the subject without mentioning, in all fairness, the disadvantages and contraindications as well. Briefly, they have been beautifully summarized as follows by Dr. Gray:

1. Malignancy of the cervix
2. Malignancy of the endometrium (as a rule)
3. Large myomas—larger than a fetal head
4. Pelvic inflammatory disease
5. Endometriosis
6. Ovarian tumors
7. Fixation of ligaments
8. Post-irradiation fixation
9. Previous abdominal surgery (of certain types)
10. Pseudodescensus with a long cervix
11. Narrow vagina
12. Lack of mobility
13. Possible other intra-abdominal disease
14. Lack of experience, confidence and enthusiasm of the surgeon.

Morbidity and Mortality

Finally, a study of this sort would not be complete without figures on morbidity, mortality and complications. These are shown in tables 11 and 12. These figures compare favorably with, and are on a par with those from over the country, and do not require too much comment. Morbidity figures, ac-

Table 11

MORBIDITY VARIOUS TYPES HYSTERECTOMY (1942-1956)

Period	Total Series		Vaginal		Abdominal		Subtotal	
	Cases	Morbid	Cases	Morbid	Cases	Morbid	Cases	Morbid
1942-1951	1,587	598	168	77	291	97	1,128	424
1952	296	110	80	18	141	9	75	9
1953	360	102	105	25	203	60	52	10
1954	353	122	78	21	221	82	54	19
1955	320	122	115	39	171	65	34	18
1956	258	100	83	26	145	63	30	11
% Morbidity		36.3%		32.7%		32%		35.7%

Table 12

MORTALITY VARIOUS TYPES HYSTERECTOMY (1942-1956)								
Period	Total Series		Vaginal		Total Abdominal		Subtotal	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1942-1951	1,587	3	168	1	291	0	1,128	2
1952	296	1	80	1	141	0	75	0
1953	360	0	105	0	203	0	52	0
1954	353	0	78	0	221	0	54	0
1955	320	2	115	0	171	1	34	1
1956	258	1	83	1	145	0	30	0
Mortality Rate	0.18%		0.47%		0.08%		0.21%	

cording to accepted standards of morbidity, in my humble opinion, are not worth the paper they are written on. The standard of morbidity is a temperature of 100.4 on any two successive postoperative days, or 101 on any postoperative day other than the day of operation. Thus, many cases are classified as morbid which in no sense could honestly be considered as such. Our mortality figures speak for themselves; there is only one instance where it is felt that death may have been classified as preventable, in a case of subtotal hysterectomy in which the patient bled to death from a ligature slipping from the uterine artery, as was shown by postmortem examination.

Summary

1. The incidence of hysterectomy is rapidly increasing, due largely to the liberalization and widening of the indications for hysterectomy.

2. The departure from subtotal hysterectomy is almost complete in this hospital, but the percentage should eventually drop to below 5 per cent.

3. The general surgeons, who do more than 50 per cent of the hysterectomies in St. Joseph's Hospital, are showing a somewhat increased tendency to, but are not following the trend of the gynecologists in taking advantage of the vaginal route for hysterectomy, particularly where repair work is indicated.

4. Due to what we consider may be largely attributed to the influence of a good resident training program, the overall picture of hysterectomy compares favorably even with the hospitals where ALL of the hysterectomies are done by gynecologists.

5. Our morbidity, mortality and complications compare favorably with those from over the country.

STAFF CONFERENCE

University of Tennessee College of Medicine*

Achalasia

DR. I. FRANK TULLIS: Our case today will be presented by Dr. McGee.

DR. ROBERT MCGEE: W. W., a 20 year old colored male, was admitted to the John Gaston Hospital on October 14, 1957, with the chief complaint of vomiting.

Present Illness: The onset of the present illness was approximately 3 months prior to admission. At that time the patient had a severe upper respiratory infection which lasted one week. Following this he first noted a choking sensation sub-sternally on swallowing food. There was also a sensation that food stopped or "stuck" at about the level of the lower end of the sternum and then slowly passed on down. This was sometimes followed by vomiting with relief of the discomfort. The vomiting occurred within five minutes after eating. It consisted always of the undigested food just ingested. Initially this sequence of events occurred occasionally, but it gradually increased in severity and frequency until at the time of admission to the hospital, vomiting was following at least every other meal. Often he would be unable to finish a meal because of vomiting. During this time there was a weight loss of 24 pounds. There was no history of hematemesis, melena, jaundice, or change in bowel habits. He has had no previous similar episodes.

Past History: The review of systems was otherwise negative. The past history revealed that the patient had been in excellent health all of his life. He had had no serious illnesses, no operations, no serious injuries, and no hospitalizations. He had gonorrhea four months previously; this was treated by a private physician with penicillin. He has had occasional attacks of wheezing when exposed to dust since the age of 10 years.

The patient is unmarried, lives with his brother and sister-in-law and works as a hot press operator in a wood veneer works. He has worked at his present job for two years. He has a fourth grade education. He smokes one to two packs of cigarettes daily. He used to drink one or two quarts of beer daily and one-half pint to one pint of whiskey weekly but stopped this after the onset of the present illness.

Family History: Family history was noncontributory.

Physical Examination: Examination revealed a well-developed, well-nourished colored man in no acute distress. He was quiet, cooperative, and seemed well-adjusted emotionally. Blood pres-

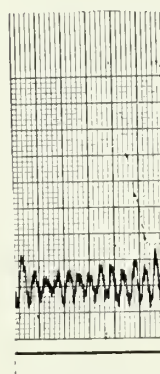
sure was 115/70, pulse 76, respirations 24, temperature 98.2. The physical findings were entirely normal with the exception of an occasional expiratory wheeze on examination of the chest. The abdominal examination revealed no palpable organs or masses and no tenderness. Rectal examination was normal.

Laboratory Studies: Routine laboratory studies were as follows: hematocrit 48%, hemoglobin 15 Gm., white cell count 6,000 with a normal differential. Urinalysis: specific gravity 1.005, pH 5, sugar negative, protein negative, microscopic negative.

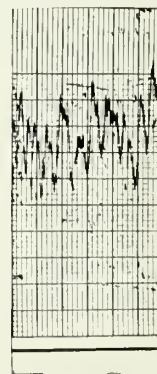
The patient has had several special procedures carried out in addition to barium studies of his esophagus by X-ray and fluoroscopy. Esophageal motility studies with an intra-esophageal balloon were done on October 17. Esophagoscopy was performed on October 21, and dilatation of the esophagus was done on October 25. The esophageal motility studies were repeated on October 29.

Course in Hospital: This has been characterized by a continuation of all symptoms until the time of esophageal dilatation. Following that procedure he has experienced marked relief of all symptoms. He has been able to swallow with almost no difficulty, and the substernal discomfort has subsided entirely. He vomited on one occasion on October 27, but with this exception has had no further vomiting following dilatation. His hospital course has been otherwise uneventful except for an episode of bronchitis with fever which began on October 25, (prior to dilatation) and which responded promptly to antibiotic therapy.

DR. CREIGHTON RHEA: Examination of the esophagus fluoroscopically and radiographically on October 8, revealed a moderate degree of generalized dilatation of the esophagus and delay in passage of barium through the esophagogastric junction (Fig. 1.) The findings represent achalasia of the



ESOPHAGEAL MOTILITY
DURING CONTROL PERIOD



INCREASE IN ESOPHAGEAL
TONUS AND ACTIVITY
15 MINUTES AFTER INJECTION
OF 7.5 mg. URECHOLINE

FIG. 1

*From the Department of Medicine, University of Tennessee College of Medicine, Memphis, Tenn.

esophagus. Re-examination on October 28, following therapy, again reveals generalized dilatation of the esophagus with delay in passage of barium. There has occurred a slight decrease in width of the esophagus since the initial examination.

DR. ALVIN J. CUMMINS: This man has a moderately advanced case of achalasia or cardiospasm. Incidentally, the first term is the preferred one at present because, as I shall show, there is no evidence of any "spasm" at the cardia such as is implied by the second name. To put the subject of achalasia in its proper perspective, let us discuss something about the mechanism of deglutition. Swallowing has three phases: first, the passage of food through the mouth into the pharynx; second, the passage of the material through the pharynx; and third, descent through the esophagus.

All of this process is made up of a complex sequence of physiologic events. In the first stage, the bolus of food is put on the tongue which then presses up against the soft and hard palates and forces the bolus posteriorly into the pharynx. This requires the action of the tongue muscles and an intact soft and hard palate. During the second stage, a series of very complex and coordinated events occur. The bolus of food is pushed into the pharynx and has to traverse it in getting to the esophagus, and so it is necessary that the various other openings into the pharynx be closed off. This is accomplished by, (1) the soft palate being pulled up to occlude the nasopharynx, (2) the pillars of the fauces closing and the tongue remaining pressed up against the palate so as to block off the mouth, and (3) the larynx being pulled up and forward, blocking off the entrance into the respiratory system. If any of these mechanisms fail, one will have dysphagia and regurgitation of the food into the nose, mouth or trachea. This is seen in cases of various neurologic diseases such as myasthenia gravis and in cases of palatal paralysis in diphtheria, cleft palate, and the like. When the bolus of food reaches the posterior wall of the pharynx, it excites a reflex over the glossopharyngeal nerve which causes the muscles of the pharynx to close, squeeze down on the bolus, and to open the crico-

pharyngeus muscle, allowing entrance into the esophagus. The third phase of deglutition consists of the passage through the esophagus. The pharyngeal muscles contract and propel the bolus downward toward the cricopharyngeus and into the esophagus, and then the wave of peristalsis initiated in the pharynx moves down the esophagus all the way to the stomach as the primary peristaltic contraction and pushes the bolus of food ahead of it is a result of the pressure gradient built up. This whole sequence of events takes place in about 10 to 12 seconds, and the rate of progress of the peristaltic wave down the esophagus is approximately 2 to 3 cm. per second.

Although still incompletely understood, recent work on the anatomy, physiology and pharmacology of the esophagus has aided greatly in understanding the derangements of deglutition in achalasia. Several facts are apparent. In a number of cases of achalasia degeneration of the myenteric plexus of Auerbach has been demonstrated. This deficiency of innervation may well be the basis of several physiologic disturbances which have been demonstrated. First, the inherent motility of the esophagus, as demonstrated by intraluminal pressure measurements or balloon-kymography, is reduced and irregular, and the rate of passage of a balloon or bolus through the esophagus is decreased. Secondly, Drs. Kramer and Ingelfinger have demonstrated an increased sensitivity of the esophagus to Mecholyl in cases of achalasia. Administration of this drug produces profound increase in tonus and a tetanic spasm or contraction of the body of the esophagus. This phenomenon has been interpreted as a pharmacologic demonstration of deficiency of parasympathetic innervation and as an application of Cannon's law, wherein a denervated structure is hypersensitive to the parasympathetic chemical mediator acetylcholine or its congeners. In addition to these abnormalities in the body of the esophagus, a third derangement consists of reduced amplitude and/or inadequate propagation of the primary peristaltic wave leading, evidently, to insufficient rise of pressure to open the normally closed esophageal

vestibule into the stomach. Thus it is apparent that achalasia is a complex problem involving motor disturbances of the entire esophagus. There is no evidence of "spasm" at the cardia; the abnormality lies more in deficient innervation leading to loss of reflex opening of the vestibule due to deranged motor activity.

We have made motility studies of the esophagus in this man from a balloon placed in the middle third of the organ. Following Urecholine, a marked rise in tonus and motor activity was recorded similar to that reported by Kramer, Ingelfinger and others (Fig. 2). This pattern was observed both

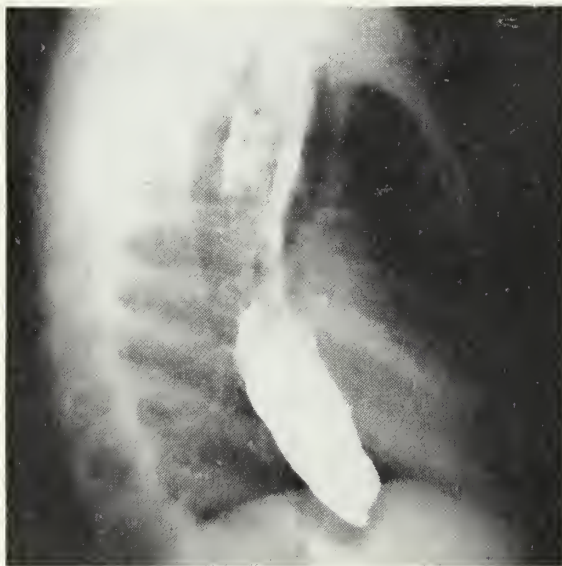


FIG. 2

before and after dilatation, substantiating the obvious fact that stretching the cardio-esophageal junction does nothing to correct the underlying physiological disturbance.

Despite advances in understanding the nature of achalasia, therapy is still a problem. Mild cases may require no treatment beyond soft diet and, if the esophagus is dilated, sleeping with the head of the bed elevated to avoid pulmonary regurgitation. Psychotherapy and skilled manipulation of an offending environment are quite important. Almy and Wolf have demonstrated well that in achalasia emotional stress may intensify symptoms and prolong esophageal retention. If the condition requires measures beyond this type of approach, I think the next step is dilatation. This man was dilated several days ago and has noted

marked relief of dysphagia. Dilatation works by artificially forcing open the normally closed vestibule. It is quite an effective therapeutic measure. Olsen and co-workers, in a recent report from the Mayo Clinic, found that 60 per cent of 600 cases of achalasia obtained permanent relief of dysphagia after a single hydrostatic dilatation, and an additional 20 per cent after subsequent courses. Our plan in this patient is to follow his course and see how he responds and, if his symptoms become worse again, to give him one or two additional dilatations. At the end of that time, if it is apparent that he is not having a satisfactory clinical response, we shall probably have to advise operation. The Heller operation of esophagocardiomyotomy seems to be the most used procedure at the present time. In my opinion, though, it should only be employed if simpler means fail to give an adequate clinical response.

DR. EUGENE J. SPIOTTA: What would be the normal response to Urecholine?

DR. CUMMINS: Nothing. No rise in tonus.

DR. TULLIS: Do all of the waves represent peristalsis?

DR. CUMMINS: Many of them, Dr. Tullis, are respiratory waves; you can correlate them with the respiratory tracing from the pneumograph. This is a complex of respiration, cardiac impulse and the intrinsic rhythm of the esophagus, and with a balloon I do not think one can separate these at all.

DR. RICHARD L. WHITTAKER: Did he have pain during the Urecholine test?

DR. CUMMINS: No, he did not.

DR. TULLIS: Dr. Storer, would you like to continue our discussion of this subject of achalasia and its management?

DR. EDWARD H. STORER: Thank you, Dr. Tullis. Dr. Cummins and I are in almost complete disagreement on a few problems in gastroenterology; an outstanding example might be the proper therapy for gastric ulcer. But for the vast majority of problems, I think that we are in essential agreement, and we are in agreement on the proper therapy for achalasia of the esophagus. I agree that almost all patients should have a really good trial of conservative therapy. I have some reservations about the hydrostatic dilatation and think

that it is wise to start out with bougie dilatation done over a thread which is swallowed until firmly anchored in the small bowel. This should be carried out as many times as necessary to dilate the cardia so that a No. 60 bougie will pass through easily. The figures are about the same for bougie dilatation as for the Mayo Clinic figures on hydrostatic dilatation, except that it often takes more bouts of dilatation. Only about 10 per cent will be relieved for any length of time after a single series of bougie dilatations. Probably 50 or 60 per cent more, bringing it up to about the 70 per cent figure, reported by the Mayo Clinic, will be benefited by repeated dilatations and will probably not need surgical treatment. So that leaves us with some 30 per cent who will sooner or later require operation.

The immediate surgical result is good after a good many different kinds of procedures, and the choice of procedure really is not judged by the immediate result by what happens to the patient in the ensuing years. The first procedure which gained any popularity was devised by Mikulicz in 1904 or 1905, and consisted simply of doing a gastrostomy and performing a digital or instrumental dilatation from below. This has been abandoned. A later procedure, called the Wendel procedure and reported in 1910, is similar to the Heineke-Mikulicz pyloroplasty in that a longitudinal incision is made through all layers of the lower esophagus and carried down on to the stomach and then a transverse closure carried out. Analogous to the Finney pyloroplasty is the Grondahl procedure described in 1916, which is a lateral anastomosis in continuity between the lower esophagus and the fundus of the stomach. These procedures, these cardioplasties, give a good immediate result. The long term result is not outstanding because of peptic esophagitis; they have been abandoned for that reason.

The currently popular Heller procedure, which was first reported in the German literature of 1913, enjoyed a brief flurry of popularity, then died out and has recently been resurrected. As originally described, an incision was made both anteriorly and posteriorly. It was modified later by

Zaaiger so that the proper name is now the Zaaiger-Heller procedure. In this procedure, an anterior incision is made down to the mucosa of the esophagus and the stomach. This operation is successful immediately in probably 85 or 90 per cent of the cases, and the few failures that are reported are very likely due to inadequate incision which simply has not spread the muscle fibers enough. We do not yet know what the long term results will be: I worry about it a little bit. The peptic esophagitis problem, I think, is still with us; it certainly is not as bad as with the other procedures but I think that the problem still exists. The surgeon may contribute to this problem also. When he does his cardioplasty he may well weaken the diaphragmatic fibers about the hiatus sufficiently so that a small diaphragmatic hernia results, which we know will lead to peptic esophagitis. I have been trying to persuade my colleagues, so far unsuccessfully, who do the operation here, because of our subspecialization, the abdominal surgeon is not allowed to do these here, to combine the Zaaiger-Heller procedure with vagotomy and pyloroplasty. I think that they will be forced into it later on.

In those cases in which the Heller operation is not successful, two procedures are now being tried, one devised by Wangenstein, in 1950, which consists of a proximal gastrectomy with anastomosis of the esophagus to the antrum of the stomach, combined with, of course, vagotomy and pyloroplasty. This is pretty radical surgery, however, for benign disease, and perhaps the operation recently devised by Merendino is going to win wider popularity. This consists of vagotomy and pyloroplasty with interposition of a jejunal segment some 5 or 6 inches long. Merendino thoroughly tested this procedure in the laboratory and has now tried it on several patients with outstanding success.

To get back to the hydrostatic dilatation, I am not condemning it,—I think that it may be all right but I worry about it a little because I think that you are doing a Heller procedure without the benefit of actually seeing what you're doing. It is probably safe in the hands of a person who is experienced in the method and knows what he

is doing, but I do not think all practitioners should attempt it. I feel that one probably ruptures the muscle fibers of the lower esophagus and, in effect, accomplishes a non-surgical Heller procedure.

DR. TULLIS: Thank you, Dr. Storer. Are there any questions or comments from anyone else?

DR. SPIOTTA: I would like to ask Dr. Cummins a question. We have taught patients with this condition to use a mercury dilator on themselves once a week; this has been successful in keeping them out of trouble. I was wondering what disadvantage might be encountered.

DR. CUMMINS: Well, one disadvantage is that you would have to be a slave to a dilator.

DR. SPIOTTA: Well, is that any different than being a slave to a diet when you have an ulcer, or a slave to a certain amount of activity when you have heart disease?

DR. CUMMINS: In the case of heart disease, you may not have much of anything

else you can do about it except be a slave to it. But in this case we do have surgical procedures which can give quite good results. I personally feel, Dr. Spiotta, that I would pursue the following course: if I dilated the patient, by whatever means, a reasonable number of times and he were still having symptoms, I would then consider the surgical approach. I think there is some danger in repeated dilatations, particularly by the patient himself; I think also that it is an awful nuisance and I would resort to operation in that case. In answer to Dr. Storer's comment, I think any dilatation procedure to be effective has to rupture the muscle fibers, do a "Heller operation from the inside," in other words, and if it does not do this I would be very suspicious that it is not going to have much effect on relieving the symptoms of achalasia.

DR. TULLIS: I would like to thank Dr. Cummins, Dr. Storer, Dr. Rhea and all those who took part in our discussion. We stand adjourned.

CLINICOPATHOLOGIC CONFERENCE

Baptist Memorial Hospital* Gangrenous Cholecystitis

Clinical Abstract. This 73 year old white retired salesman was admitted to the hospital complaining of "stomach trouble." The present illness began the previous evening with the onset of increasingly severe epigastric pain about thirty minutes after his evening meal. The pain began in the "pit of the stomach," was constant and subsequently radiated to both upper quadrants of the abdomen. There was tenderness and fullness. No mention was made of nausea or vomiting. There was a history of two similar episodes during the past 4 years, but the exact character and duration of these episodes were not described.

Except for the above, the patient had enjoyed good health until the onset of the present illness. His history revealed that some 15 to 20 years ago he had undergone a cholecystectomy and appendectomy. The patient stated that 47 gallstones were found in the gallbladder at that time. During the last several years he had had some pain in the left leg said to be due to a "pinched nerve in the back."

On admission his temperature was 100° F., P. 92, R. 22 and B.P. 170/100. The patient was well nourished and not in acute distress. Head and instructors, heart and lungs were negative. There was a well healed upper right rectus scar with no herniation. Liver, spleen and kidneys were not felt. There was a moderate amount of epigastric tenderness on deep palpation in the right upper quadrant. Peristalsis was not described. The prostate was "huge."

The admission laboratory data consisted of the following: Hgb. was 15.2 Gm., and W.B.C. 11,700 (86% segmented neutrophils). The urine revealed a specific gravity of 1.027, a trace of protein, 4+ glycosuria, 1+ acetoneuria, negative diacetic acid and rare R.B.C. and W.B.C. A plain film of the abdomen revealed no intestinal distention and no air was seen under the diaphragm.

On the second hospital day the temperature rose to 101° F. The R.U.Q. pain and tenderness persisted. Basal inspiratory rates were heard posteriorly. E.K.G. showed left axis deviation. Chest roentgenogram revealed supradiaphragmatic densities bilaterally compatible with discoid atelectasis, and the lung fields showed emphysema and fibrosis. W.B.C. was 20,700 (88% segmented neutrophils). The urine contained glucose (3+) and acetone but was negative for diacetic acid. Blood sugar was 240 mg. %, CO₂ was 32 mEq/L (this was thought to be an error, but a second test was 30 mEq/L); serum amylase

was 333 mg. %. The patient was started on Tetrex 200 mg. every 6 hours and a sliding scale of insulin therapy according to the urine glucose.

His condition was essentially the same on the 3rd hospital day and Probanthine therapy was instituted. The urinary output was not measured but was inadequate. The next day the W.B.C. was 17,700 (88% segmented neutrophils) and his temperature was 101° F. The nurses' notes stated that the patient was disoriented but his physician stated that he showed a "shallow affect" but was not disoriented. Respirations were 40 per minute; urine glucose 3+. On the 5th day icterus developed and the blood pressure decreased to 70/40. The posterior basal inspiratory rates persisted. There was slightly less right upper quadrant tenderness and the liver was palpable. Blood sugar 284, serum amylase 516, NPN 50, and serum bilirubin 11.5 mg. % (6.5 direct and 5.0 mg.% indirect). On this day streptomycin and penicillin were added to the regimen and were continued throughout the remainder of the hospital course, as was tetracycline. Wangenstein suction through a Levin tube was instituted and resulted in some flattening of the abdomen. The patient was digitalized with Cedilanid intravenously. Later he developed some atrial tachycardia and was given Pronestyl. Intravenous infusions were started and were for the most part 10% invert sugar. During the evening of the 5th hospital day his temperature reached 104.6° F.

The following day he appeared worse. The jaundice was severe, the blood pressure was not well maintained and the fever persisted (104° F.). Hydrocortisone therapy was started. The patient's condition was essentially the same over the next two days. He became less icteric, and became afebrile but his general condition did not improve. On the 8th day he developed hiccoughs. The serum potassium was 6.4 mEq/L, serum sodium 116 mEq/L, serum chlorides 85 mEq/L and NPN 178 mg. %. The patient expired on the 9th day.

From the period of the 3rd hospital day to expiration, the urinary output was apparently considerably below normal. On the 7th day it amounted to 10 ml.

DR. GEORGE LIVERMORE, JR.: We have an elderly man, previously well, who came to the hospital and died in nine days. Without going over the protocol, we can pick out some salient features. First, 15 or 20 years ago he had 47 gallstones and later on he became jaundiced. These facts certainly force us to consider the liver and biliary tree. His jaundice could also point to the pancreas and there are other features that make us think this organ might be the seat of disease: he developed a diabetic picture and, later on in his course, the amylase progressively began to rise. We must also direct our attention to the urinary system.

*From the Department of Pathology, Baptist Memorial Hospital, Memphis, Tenn., Merlin L. Trumbull, M.D., Director.

The man had albuminuria when he came in; his NPN rose terminally to very high levels; he had an electrolyte imbalance; and we are told that on physical examination his prostate was "huge."

Let's go back now and look in detail at each of these systems taking first the biliary tree. This man's trouble could well have been precipitated by retained common duct stones or even a stone that reformed in a dilated duct, which was the seat of cholangitis. Retained stones, unfortunately, are far more common than the surgeon would like to have them. Duct exploration is certainly not infallible. The pain that this man had when he came in was not typical of a common duct stone; he did not have biliary colic. Common duct stones, however, are not always typical and certainly the findings and complaints are not inconsistent with their presence. They often cause chills and fever, which this man did not have prior to admission. They may cause jaundice without pain. They may cause pain that is not at all typical of biliary colic. So we cannot exclude common duct stone on the basis of his history. I do believe the way his jaundice behaved is not too characteristic. It appeared on his fifth day and by the seventh day it was improving again. It came on quite suddenly. Fluctuating jaundice is certainly not against common duct stone and he could have his stones for some time without having jaundice appear. I do not, however, believe it would have appeared and disappeared quite as fast as it seems to have. Here, then, is a man who died in 9 days, and I think such a course is not particularly suggestive of a common duct stone by itself.

Let's go on to consider the pancreas. The pancreas is a frequent site of occult disease and a favorite hiding place for a clinicopathologic conference. The disease can be far advanced before it becomes clinically apparent. The pain our patient had, coming on after meals, could well be due to pancreatic disease. Typically, we like to find radiation of pain into the back. The first thing we must consider in pancreatic disease is carcinoma. He was in the age group for it. Against it is the fact that his jaundice improved. Fluctuating jaundice is supposed

to point to a stone or some condition other than to carcinoma. Again, I don't think his course is typical of carcinoma; he went downhill too rapidly. In carcinoma of the pancreas usually we have pain, weight loss and jaundice either all together or in varying combinations, in the face of which the internist has been trying to establish a diagnosis for some time without success. I just believe this man died a little too quickly to have carcinoma of the pancreas.

Well then, might we have had some form of pancreatitis? This, in turn, could be precipitated by a stone in the common duct. A carcinoma is frequently associated with pancreatitis in other portions of the gland. Of course, the pancreatitis alone could explain his jaundice or a common duct stone present with it might account for it. His story does not fit that of a chronic relapsing pancreatitis, as the classical disease entity is described with the patient's having recurring attacks of more and more severe pain. This man did have two similar episodes but I don't believe they were severe enough to be typical of chronic relapsing pancreatitis. He does not have a long history; he does not have any calcification in his pancreas showing up on his X-ray films; and, again, he went downhill and died too rapidly for me to think he had chronic pancreatitis.

Could he have had an acute pancreatitis? His initial symptoms were not particularly severe. There is no history of alcoholism. By and large, since the amylase determinations have come into use, we are diagnosing milder cases of acute pancreatitis, so not all cases of acute pancreatitis are the overwhelming hemorrhagic type. Although this patient's symptoms were not severe, we cannot rule acute pancreatitis out on that basis. His amylase values were a little unusual in that in acute pancreatitis we usually expect them to be highest initially. Frequently in an acute attack if we do not get an amylase determination early we may be unable to establish the diagnosis because it tends to fall so rapidly. Just the reverse occurred in this man; his amylase rose toward the end of his illness. When he came in, he did not appear to be too critically ill, and I do not think an acute pancreatitis

would have given him a diabetic picture in the early stages had he not been a little sicker. These people do develop transitory elevations in their blood glucose and glycosuria, but usually they have to have a rather extensive edema and damage to the pancreas to affect the islets.

We do not know much about his abdominal findings during the course of his disease. We are led to believe that he became distended, since a Levin tube was passed with some relief of his distention. The man died apparently in shock and oliguria and these two states do occur in acute pancreatitis. We can exclude almost everything else because we feel that the rapid downhill course that this man had was inconsistent. Acute pancreatitis cannot be excluded on that score. I wonder if this man had a calcium determination made at any time. It might be interesting to know because it is of some prognostic value in acute pancreatitis being a measure of fat necrosis. One more thing we must mention in passing, although it seems unlikely, is a posterior penetrating duodenal ulcer. He was placed on Banthine. Of course this is a good drug for pancreatitis, too, as it decreases pancreatic secretion both directly and by reducing gastric secretions. His pain cycle is certainly suggestive of ulcer. Jaundice does occur in a small number of these posterior penetrating ulcers due to edema and pancreatitis around the bile duct. I have not, to my knowledge, ever heard of such patients developing enough pancreatitis to get a diabetic picture. Again, I think his course is certainly not typical of a posterior penetrating ulcer.

Turning our attention to the urinary tract, we find the patient had a "huge" prostate, but there is no mention of any obstructive symptoms. He did have hypertension and terminally his NPN and potassium rose and his chlorides and sodium fell. It might be nice to know what his CO_2 was on about the eighth day. It is interesting that when he came in he had a urine specific gravity of 1.027, which might make one think that he had fairly good renal function. However, he also had a three plus glycosuria and I therefore think probably his renal concentration was not

as good as that 1.027 would make us believe. As far as I can go with the urinary tract, I believe he had some underlying renal disease and died in renal failure, but I think it leaves too much unexplained to be the main cause of his trouble.

We have discarded most of the diseases discussed so far on the basis of the way this man died. He died in shock; actually I believe he died in central rather than peripheral circulatory failure. He had a fall in blood pressure from hypertensive levels down to shock-like levels, developed rales in his lung bases, his liver became tender and palpable and his internist began the administration of Cedilanid. I believe this man was in cardiac failure.

I do not have a very firm diagnosis, but ever since first reading this protocol I have retained a hunch that goes like this:

Here is a man who has diabetes with acetone in his urine and who ought to be in diabetic coma or impending coma but he has a CO_2 of 32. That troubled his internist too. He made them repeat it, and it came back 30. So the man isn't in acidosis; he has a little acetone in his urine. I think perhaps he is just dehydrated. What besides diabetes gave this man his hyperglycemia? Does anybody want to volunteer and tell me this patient's habitus? Was he obese? If he was obese my pet hunch is pretty well excluded.

A PHYSICIAN: He weighed about 190 pounds.

DR. LIVERMORE: The thing that crossed my mind is that this man could possibly have a pheochromocytoma. It is very rare in obese people, and is associated with gallstones in a higher percentage of cases than can be explained by fortuitous circumstances. In a recent series from the Mayo Clinic five out of fifteen of them were found to have some nephrosclerosis associated with their disease. I think this man may well have had some nephrosclerosis. As a matter of fact, a patient with a pheochromocytoma may go on for some time without too much difficulty until terminal renal failure sets in. Even though his hypertension was persistent, and I am assuming that, such is the case in a goodly percentage of pheochromocytomas. He had fever, and

temperatures can rise with pheochromocytoma to levels such as have been reported here. That the man could die in cardiac failure is certainly possible. The main trouble we have with this diagnosis is that it is difficult to explain his pain and the onset of his symptoms. These patients can produce bizarre abdominal pain, chiefly colicky, and probably on the basis of vascular constriction in the mesentery. But we are still a little hard pushed to explain this patient's pain. The stimulus of a meal might possibly by peristaltic pressure on the tumor cause a little more release of norepinephrine and produce pain by vasospasm but this man did not have a paroxysmal type of symptoms. If, however, we will allow him to have a pheochromocytoma, then a lot falls into place. He went into failure from his hypertension, and then went into shock and becomes oliguric and uremic. His potassium became elevated in kidney failure. Pheochromocytoma by the effect of norepinephrine can produce elevations of serum potassium. His lowered sodium and chloride can be explained by his Levin tube as well as the fact that he was in renal failure. I believe the jaundice was produced by acute cardiac failure with passive congestion of the liver, but right adrenal tumors have been reported as producing jaundice through pressure. Pheochromocytomas are seldom large, and I doubt that duct compression is the mechanism involved here; however, ten per cent of them are malignant and a somewhat smaller percentage are extra-adrenal. They can occur anywhere in the system of paraganglia up and down the aorta, and they not infrequently occur around the celiac ganglion. A tumor located in this region, particularly if we let it be malignant, could cause some pancreatitis. It could involve the common duct and aggravate the jaundice that this patient had. We can even explain those "pinched nerves" in his back on the basis of metastasis to the spine because pheochromocytomas do go to bone occasionally. If this man is obese I am going to have to rescind my diagnosis because I do not think a pheochromocytoma would be even remotely possible. If he had been obese to any extent, I would have to

suggest an acute pancreatitis on the basis of common duct pathology, probably a retained stone.

DR. JAMES ALEXANDER: Dr. Livermore has presented an excellent discussion and I have to admit that I did not think about the possibility of a pheochromocytoma. One other possibility which he did not mention and which is so rare that I almost hate to mention it is an aneurysm of the hepatic artery. Apparently it can cause pain somewhat similar to this man's pain. As the aneurysm enlarges, it frequently displaces the liver and may cause jaundice. Also fever is associated with this, and then terminally it is followed by circulatory collapse due to perforation. This man did not expire quite as rapidly as you would expect from a perforation of an aneurysm although if it were possibly protected death might occur more slowly. This man appears to have died with the so-called hepato-renal syndrome with liver and renal failure. It is a little difficult to know which came first. Another possibility in view of the evidence of diabetes is necrotizing papillitis. His urinary findings were not too suggestive of this but if he had had enough urinary blockage one might not expect to find too much pyuria.

I really do not believe that this man's enlargement of the liver was on the basis of myocardial insufficiency. It occurred so rapidly and there were not very many other findings except for the rales in the lung bases which would suggest cardiac failure. Another doubtful possibility is a hepatic vein thrombosis, which had followed a pancreatitis. I favor an aneurysm of the hepatic artery.

DR. HOWARD BOONE: It is difficult for me to interpret all of the findings in terms of one major disease process. I think this man may have died more of the complications of his disease than of the original disease itself. We have to bear in mind that he had a great many physiological influences bearing on the situation here, many of which tend to counteract others. In the first place, he apparently had diabetes and high blood pressure. He eventually went into kidney failure. He had severe liver and pancreas disease. Then he had the ad-

ministration of the steroids. All of these factors will upset the electrolyte balance. Many of them will tend to offset the effect of the others so that I cannot rationalize these incongruous laboratory reports. I would be compelled to analyze this case as one having obstruction of the common duct and I think that the most likely cause would be a stone, although I do not think we can say that it was not a tumor, stricture or other obstruction in that region.

DR. FENWICK CHAPPELL: I believe Dr. Livermore has brought up many of the exotic possibilities but I am going along with Dr. Boone and strive to explain this man's symptoms and clinical course on the basis of a condition which is somewhat more common. Maybe I have done a little bit too much inductive reasoning on this and it made the picture fit my diagnosis, yet I would like to share with you the ideas that I had about this thing. The onset of his illness is rather characteristic of one form or another of acute pancreatitis in that it followed within about thirty minutes of meal. We do not know the nature of the meal that he ate but very commonly the acute forms of pancreatitis do follow a large meal or a bout of alcoholism. Since we know nothing about his alcoholic history, I think that need not necessarily influence the diagnosis because you can have forms of acute pancreatitis without alcoholism. The initial amylase value was described as possibly mitigating against an acute form of pancreatitis; however, my limited experience with acute hemorrhagic pancreatitis included a case whom we explored thinking possibly it was a perforated ulcer because the serum amylase was only about 390 instead of over 400. So I think that need not necessarily rule out the pancreatitis diagnosis. It would appear that this diagnosis might go along with the man's previous episodes of pain and that it might be a recurrent acute form of pancreatitis, which is frequently associated, as the other discussants have mentioned, with biliary disease which this man had. I do not think it is necessary to assume that this man had a stone in the common duct, although we certainly cannot rule that out, and that would have been an exciting factor in his

pancreatitis. I feel that, first, he might have developed an edematous pancreatitis which, despite rather adequate therapy, progressed on about the fifth day to the more classical hemorrhagic pancreatitis. The hemorrhagic pancreatitis can be sudden in onset or it can be superimposed on a relatively milder form of edematous pancreatitis. I think that might explain his shock picture. I think also the pancreatitis can adequately explain his diabetes.

The "huge" prostate has not been mentioned at great length. Dr. Livermore pointed out that he did have what appeared to be adequate urinary concentration on admission but I think with the man's advanced age, the chronic or at least partial obstruction that he probably had due to this prostate, with the added insult of breakdown of protein materials from his hemorrhagic pancreatitis, might have overtaxed his kidneys to the point that he did go on into uremia. I feel that he did die in kidney failure as a result of complications of his acute pancreatitis. The jaundice certainly could be explained on the basis of edema of the head of the pancreas around the common duct, and the fact that this jaundice subsided after the man had been on steroids for awhile also might figure because the edema might have subsided with the steroids allowing opening up of the common duct and some improvement in the jaundice. I have made up my mind to diagnose this as an acute recurrent pancreatitis, which rather than subsiding, progressed to the acute hemorrhagic form.

DR. DAVID DUNAVANT: I want to congratulate Dr. Livermore on his interesting and informative discussion. There are two possibilities that I want to mention. One is carcinoma of ampulla of Vater with the changing jaundice and the breaking off of some of the tumor. It is notorious in producing jaundice that will improve and change. If the stool had been studied for occult blood it might have helped some in this case. Another possibility would be a liver abscess with possible rupture and ensuing changes that follow.

DR. WHITELEATHER: Being a radiologist, there are a couple of things about this that I wanted somebody to explain a little

better for me. Cholecystectomies were certainly performed 15 or 20 years ago, but it was also fairly common to do a cholecystostomy and to remove the stones. We do not know whether that was or was not done. He continued to have epigastric tenderness on deep palpation in the right upper quadrant. Later on it is noted that the right quadrant pain and tenderness persisted, and then he got jaundiced. His white count was 20,000 with 88% segs. I would think maybe he had something up here. Maybe they did not remove his gall bladder; maybe he had a re-formation of stones, then perforation of the gall bladder or acute cholecystitis. The abstract says that on the fifth day icterus developed, and later it describes right upper quadrant tenderness and the liver was palpable. Later on, the jaundice was severe, but it does say in the last paragraph that the patient became afebrile and less icteric, but he was practically dead by that time. All these other things could be accessory. I suspect something in the biliary tract in the way of an acute inflammatory process or perforation.

DR. A. B. WEIR: I think there are many times discussions that will help clarify the protocol. It is impossible to transpose the thinking of the doctors who work with the patients, to the chart and from the chart to the protocol. I believe that the progress notes were fairly adequate on this patient, but I am sure they did not reflect all our thinking; so I believe it is worthwhile to tell a little of what was going through our minds as we approached this patient from the second day when I began to see him until his demise. Also a word of explanation about what seems to be, and I agree is, a deficiency of laboratory reports particularly regarding electrolyte studies near the last. We would have liked a lot more and we would have liked some more liver function tests although the practical value of liver function tests at the time he had this serum bilirubin of twelve with half direct and half indirect would not have been great and we realized that that would not have helped us much. However, in the last two or three days of his life when he was suffering from what we were quite sure was a lower nephron syndrome, it would

have been well for those last two or three days to have potassium, serum sodium and chloride prior to the day preceding death. I was asked to see the patient on the second day only because he had glycosuria, and the surgeon had obtained a blood sugar which was quite high. Our initial impression was that this was a rather typical case of acute cholecystitis. We re-took this history three times, and the patient was absolutely certain beyond any shadow of a doubt that his gall bladder and numerous stones had been removed. The diagnosis of cholecystitis seemed so obvious, but it had to be cast out because the man was quite intelligent and alert the first two days. Then with cholecystitis cast out, pneumonia was my next diagnosis because we have seen many patients with a lot of upper abdominal pain and tenderness from lower lobe pneumonia on the right. The X-ray findings seemed not to be in favor of that. The radiologist interpreted those shadows in the right base as being discoid atelectasis rather than pneumonitis. The event of the pulmonary change is less than we would like for a patient to have such outstanding abdominal signs from a lower lobe pneumonia; so we thought that was not too likely. It was on the third day that the patient really got sick. Exploratory laparotomy was considered in these first two days, but he really did not seem sick enough for it, and something in the way of partial perforation or perforation with good localization in the upper quadrant was being thought of at this time. On the third day, the patient began getting jaundiced and in the third and fourth days developed a shock-like picture, and I think the shock-like picture is the thing that ultimately led to his death. His blood pressure remained at systolic levels of 85 for about an eighteen hour period, I believe, but following about eighteen hours he maintained a systolic level of 110-120 most of the time, and so we felt that by then we were getting that problem under control. It was our interpretation that his shock was from an acute blood stream infection, so-called bacteremic shock, and that was the reason for his being loaded then with intravenous antibiotics. We still had no firm opinion about what the cause

of his original right upper quadrant illness was. We felt by the time of the third day he was so acutely ill that he really was not in shape for surgery from that time on. He never did have evidence of acute widespread peritonitis. His signs were well localized in the right upper quadrant all the time.

DR. MERLIN L. TRUMBULL: Thank you very much, Dr. Weir. I see the surgeon standing out in the hall here. Dr. Andrews, do you want to say a word about this? We have about two minutes we can give you.

DR. W. F. ANDREWS: I was called to see this elderly man one night at home. He said "Dr. Andrews I would appreciate it if you will come, I have a sudden terrific pain in my upper abdomen. I just cannot get any relief at all." A year or so previously I removed a gall bladder filled with stones from his wife. When I saw him that evening he compared his remote cholecystectomy experience with the more recent one of his wife. He did not have any localized rigidity, and he had a well healed right rectus scar from his remote gall bladder surgery. I believed his signs and symptoms pointed to an acute attack of gall bladder disease, but being so sure that his gall bladder was out I suspected he may have had a coronary occlusion. Later I called Dr. Weir in to see this man with me, and we followed him a couple of days not knowing just exactly what we were dealing with.

DR. THOMAS C. GLADDING: I would say that sometimes one of our chief complaints as pathologists is that of not having enough history in some of the cases. Here we did have the history but it did not help too much and I believe the misleading actually is what killed the patient. The patient's trouble was a gangrenous cholecystitis. He had a gall bladder about 9x5x4 cm. It contained one stone in the fundus and one stone impacted in the cystic duct, which was greatly dilated. Both stones were about one cm. in diameter. Surrounding the gall bladder were a lot of adhesions to the omentum, induration of fat and adhesions with pericholecystic abscess formation. The common bile duct and the right and left hepatic ducts were dilated with the common duct measuring about 2.5 cms in

circumference. However, there was no obstruction encountered and the duct could be followed easily through the ampulla. I can only surmise that this patient had passed a stone recently. This may have accounted for some or all of the jaundice. Actually, I cannot explain the high level of jaundice on the basis of the gangrenous cholecystitis alone. *Streptococcus faecalis* was cultured from the pericholecystic abscess and that was the only organism recovered. That may not be unusual in view of the tetracycline, penicillin and streptomycin that the patient received. The ampulla was patent and the pancreatic duct emptied through the ampulla. The pancreatic ducts were not dilated but they did contain a good deal of inspissated material, especially microscopically.

Grossly, the pancreas was somewhat enlarged and was rather firm. There was only one small focus of necrosis in the pancreas, and the rest of the pancreas appeared fairly normal. Microscopically, it does have some acute inflammation with necrosis in the interstitial tissue, but this necrosis did not extend into the acinar tissue itself; so, it is hard to say just how much the elevated serum amylase was due to pancreatitis. There are three things in this case which could account for an elevated serum amylase (50 to 300 mgs. per cent being normal here). The first determination was 333 and the second one was 516 mgs. per cent. First of all, there was this low grade pancreatitis; secondly, there was renal failure, which is a well known cause for elevated serum amylase because the amylase is excreted through the urine and, thirdly, cortisone and ACTH may cause a significant rise in serum amylase. Therefore, there are three factors which could cause an elevated serum amylase.

He had a fatty liver weighing 2,400 grams or perhaps 500 to 800 grams over what is expected of a man of his size, who was estimated to weigh 190 pounds and was six feet tall. The fatty liver was mild to moderate in degree and would not be an unusual finding in a diabetic. It probably resulted in this case from an over mobilization of fat from the depots to the liver, which is an exaggeration of a normal process and

develops with greatly increased utilization of fat or in any condition which interferes with the oxidation of carbohydrate, such as diabetes. Usually with an uncomplicated fatty liver, the only abnormality one can find is an abnormal BSP test. Occasionally jaundice can result from it. This was not a tremendously fatty liver, and I do not think it can explain the jaundice or much else that occurred in this patient.

There was no anatomical evidence of diabetes, no fibrosis of the islets of Langerhans and no Kimmelstiel-Wilson lesions in the

kidney. I can only assume that he had diabetes based on the clinical evidence. The thing that is difficult to explain is the azotemia. The kidneys were large and very slightly granular but microscopically were remarkably normal. Therefore, I can only guess that he had a prerenal shunt resulting from the shock, and that the lowered urinary output was a result from prerenal shunting of the blood away from the kidneys. I think the main trouble with this man was a gangrenous cholecystitis.

*From the
Executive Secretary*

ORGANIZATIONAL NEWS

February 23rd Set For State-County Medical Society Officers Conference

● All officers of TSMA, officers of the county medical societies and committee chairmen of state and county societies are urged to attend the County Society Officers Conference to be held at the Andrew Jackson Hotel in Nashville on February 23, 1958. PLAN NOW TO ATTEND THIS IMPORTANT CONFERENCE OF INTEREST TO ORGANIZED MEDICINE. ELSEWHERE IN THIS JOURNAL UNDER THE "ANNOUNCEMENTS" SECTION IS THE PROGRAM FOR THIS MEETING.

Model Constitution And By-Laws for a Medical Society

● The TSMA Headquarters Office, in cooperation with the AMA, now has available a new and revised model Constitution and By-Laws for use by County Medical Societies. Many county societies in Tennessee have an antiquated and some even do not have a written Constitution and By-Laws in effect. This is an important document that every county society should have for permanent records. If your society considers the remodeling or revision of your Constitution and By-Laws, write to the Executive Secretary of TSMA, and a copy will be forwarded for your consideration and use by your society.

County Society Election Time

● Most county medical societies throughout the state usually elect their officers and delegates at the December meeting of their society. This is important due to the fact that new county society officers are urged to attend the Officers Conference to be held on February 23rd, and also certification of delegates to the House of TSMA. The office of the Executive Secretary of the Tennessee State Medical Association respectfully requests a prompt report of county society elections, for record purposes.

Refreshers Are Deductible

● The U. S. Internal Revenue Service Regulations makes deductible, expenditures for education for a "refresher" course, or a similar type of course taken to maintain the skills directly and immediately required by the physician in his employment or business. Such a course must be of short duration, not to be taken on a continued basis, and not carry academic credit.

When a doctor of medicine travels away from home primarily to obtain "refresher" education, his expenditures for travel, meals, and lodging while away from home are deductible.

The annual meeting of the Tennessee State Medical Association each year and the symposium postgraduate education program sponsored by TSMA are "refresher" courses.

Symposium Postgraduate Programs for 1958

● The Symposium Postgraduate Education Committee met in Nashville on November 17th for the purpose of selecting subjects and locations where the symposiums will be presented in the coming year. Three important subjects were selected for presentation. They are:

THERAPY WITH NEW DRUGS—ANTIBIOTICS, ATARACTICS, ANALGESICS

Panel: Internist, Dermatologist, Psychiatrist
ANESTHETICS—ANESTHESIA IN OFFICE PRACTICE AND SMALL HOSPITALS

Panel: Anesthesiologist, Surgeon, Obstetrician
UROLOGY—COMMON UROLOGICAL PROBLEMS

Panel: Urologist, Internist, Pediatrician

The above subjects will be presented in the following places:

West Tennessee— Brownsville - Dyersburg - Jackson - Paris
- Savannah, and Union City.

Middle Tennessee—Clarksville - Columbia - Cookeville -
Crossville - Dickson - Lebanon - McMinnville - Murfreesboro - Pulaski - Springfield - Tullahoma.

East Tennessee— Athens - Bristol - Chattanooga - Cleveland
- Greeneville - Johnson City - Knoxville -
Maryville - Morristown - Oak Ridge.

Journal Questionnaire Results

● The questionnaire recently forwarded to all members of TSMA, regarding the JOURNAL of the Tennessee State Medical Association, reveals that doctors want more news about what is happening both medically and in matters affecting medicine from all sections of the State. It will only be possible to give this information with your help. Please forward to the TSMA headquarters office, or the Editor, news items, notes on medical society meetings, personals, or other material related to the profession, which you feel would be of interest to your fellow physicians.

Special Meeting House of Delegates

● By the time you receive this issue, the House of Delegates of the Tennessee State Medical Association will have conducted a special session to consider the revisions in the Tennessee Surgical Plan. Notice has gone to all county society delegates that were certified as of April, 1957. Full details and results of action taken by the House will be published in a future issue of the JOURNAL.

Committee on Legal Definition of Medicine and Medical Practice

● The Committee on Legal Definition of Medicine and Medical Practice reported recently to a special meeting of the Executive Committee of the Board of Trustees. The report dealt primarily with the Legislative Council hearing on the controversial psychiatry—psychology study that was directed by the recent Tennessee General Assembly. The dispute is significant due to its impact on the many fields of medical practice. Further reports will be rendered.

Social Security

● Look for another battle in 1958 over inclusion of physicians in social security programs. HR 8883 now in Congressional pot will be considered next year. The measure raises tax base to \$4800 and makes coverage of physicians compulsory. It also increases benefits. (SEE "SPECIAL ITEM" IN THIS ISSUE.)

County Societies Should Consider

● County Medical Societies should consider the social security question in the event that it should come up in the House of Delegates. Delegates should be instructed how to vote by their societies on the question of compulsory coverage of physicians in the social security program.

Big Fight in 1958 On HR 9467

● The biggest fight in the next congressional session may be on HR 9467 which would include hospital, nursing and surgical benefits in the social security program for the first time and be a first step in a federal compulsory medical insurance plan. If the bill is adopted, approximately 13 million persons would be covered immediately. For full details on HR 9467—See Special Item, this issue.

Public Service

THE TENNESSEE TEN

Flu Epidemic Reaches Peak In Tennessee

● The current wave of influenza reached its peak in Tennessee during the week ending November 16, according to Dr. Cecil B. Tucker, chief of the Division of Preventable Disease, Tennessee Department of Public Health.

During that week, 29,855 cases were reported, compared to 20,748 cases for the week ending November 23, Dr. Tucker said. Cases reported since August 1 this year total 129,295 as against only 2,372 for the same period of 1956.

Second Flu Wave "Not Probable"

● Despite the noticeable decline in the number of reported cases, Dr. Tucker did not rule out the possibility of a second wave of flu, but he would not describe such an event as a probability. He pointed out that flu vaccine is now available in ample supply.

Flu Vaccine Supplies Adequate

● Further evidence of the plentiful supply is seen in an announcement that the U. S. has authorized export of 1 million cc's of the vaccine during December, the first such export permitted.

Note: Physicians are reminded that emphasis on the flu immunization program should not detract from the attention given to the Salk vaccination program, now that the supply has caught up with the demand for the vaccine.

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Community Honors Dr. R. W. Brandon, Sr.

● More than 600 persons attended the "Dr. Brandon Day" ceremony at Martin, November 10, honoring Dr. Robert W. Brandon, Sr., on his completing fifty years of the practice of medicine. Dr. J. Paul Baird, President, represented TSMA, and the Vanderbilt University School of Medicine, from which Dr. Brandon was graduated in 1907, was represented by Dr. Frank E. Whitacre, Chief of the Medical School's Ob-Gyn Department. After a dramatic presentation depicting highlights of Dr. Brandon's career, he was presented with a testimonial scroll by Governor Frank G. Clement on behalf of the citizens of Martin and Weakley County.

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Survey Indicates Lack of Qualified Nurse Training Applicants

● A survey, being conducted by the Public Service Office to obtain information concerning factors responsible for a shortage of nursing personnel, is about complete. A questionnaire sent to each school of nursing in Tennessee requested figures concerning enrollment in first-year classes. Those schools having less than full enrollment listed a lack of qualified applicants as the primary reason for their classes not being enrolled to capacity.

Another questionnaire, sent to hospitals, requested specific figures on nursing personnel shortages, both RN's and LPN's, and whether the shortages, if any, had increased or decreased in the past two years.

The survey is intended to assist the Public Service Committee in its efforts to determine the present situation and formulate plans to alleviate the shortage.

**M. A.'s Conduct
Workshop Courses**

● Medical Assistants, from "Memphis to Bristol," concluded successful workshop and public relations courses. Some fifty M.A.'s attended the workshop, sponsored by the Bristol Chapter of Medical Assistants Society, under the direction of Mrs. Mildred Solomon. Emphasis was on laboratory techniques and office procedure. The Memphis Chapter, in cooperation with the Memphis-Shelby County Medical Society, wound up its four-week course with a banquet December 5. The diversified curriculum included office procedure, public relations, insurance, and grievances, among other subjects.

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**Knoxville Poison
Center Has Busy
Case Load**

● The Knoxville Poison Control Center, in the University of Tennessee Memorial Research Center, handled 43 cases during its first six weeks of operation, according to Dr. Robert F. Lash, Director. The center officially opened October 1 equipped to furnish both information and treatment for cases of accidental poisoning. In addition to utilizing intern and nursing personnel of the hospital, the center has access to consultant specialists and laboratory facilities. Patients cared for include adults as well as children, and out-of-town physicians have been aided by telephone in treating poison victims.

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**Robertson Society
Backs Health Council**

● At a unique joint meeting, the Robertson County Medical Society endorsed the principles and objectives of the Robertson County Health Council. Members of the Health Council met with the Medical Society at the Society's regular monthly meeting and spokesmen outlined the Council's aims. The Council is composed of a doctor, a dentist, and community lay leaders. TSMA's Rural Health Committee directed the organization of such councils as a means of improving overall health conditions in Tennessee's non-urban areas.

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**Malpractice,
Grievances Added to
Program of
Officers Conference**

● Informative talks on two issues of vital interest to physicians—malpractice suits and grievances—have been scheduled for the State and County Officers Conference in Nashville, February 23. Mr. Dan E. McGugin, Jr., attorney for Farringer Insurance Company, will speak on malpractice suits. Dr. Thomas F. Frist, past chairman of the Nashville Academy Grievance Committee, will address the conference on grievances. Dr. Frist and Mr. McGugin will speak in place of Charles Shuman, President of the American Farm Bureau Federation, who, because of a conflict in schedule, will be unable to attend the conference.

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**A.M.A. Explains
Opposition to
Forand Bill**

● Labeling the Forand Bill "clearly socialized medicine," A.M.A. President David E. Allman has announced that A.M.A. will strongly oppose the proposed legislation. The bill, H.R. 9467, would offer free hospitalization and surgical benefits, as well as nursing home care, to recipients of social security benefits past the age of 65. Dr. Allman brands the bill as a new version of compulsory health insurance. A.M.A.'s Board of Trustees has appointed a special task force which is gathering factual material in preparation to an all-out offensive against the bill in Congress next year. Dr. George M. Fister, Ogden, Utah, who heads the task force, sees extension of voluntary health insurance to older persons as a solution, rather than a compulsory federal program.

President's Letter

THE STATE AND COUNTY MEDICAL SOCIETY OFFICERS CONFERENCE



J. PAUL BAIRD

In September, 1956, the Tennessee State Medical Association initiated a very worth-while conference embracing a program wherein closer liaison could be brought about between our county medical societies and the state association. The conference proved to be such a success and generated so much interest, that it was recommended that such a meeting be regularly conducted. The conference provided a media for the distribution of timely information that older members and committeemen who had attended many other meetings declared it to be one of the finest conferences they had ever attended. Our members newly elected to county society offices for the first time were given an introduction to the objectives and necessity of cooperation and coordination between the county societies and the state and national organization. It was felt that such a conference was a necessary part of the program for state organization activity.

The Board of Trustees was pleased with the comments on this first conference, and it was decided that it should be carried on as a bi-annual activity. Mr. Jack Ballentine, Executive Secretary, was authorized to proceed with arrangements for a second conference to be held on February 23, 1958, at the Andrew Jackson Hotel in Nashville.

Our Executive Secretary has been able to secure outstanding speakers and has a program arranged which should provide the best meeting of this kind in the entire Mid-South for 1958.

Following are the speakers and their subjects: Dr. Thomas H. Alphin, Director of the Washington Office of the AMA, Washington, D. C.—Subject: "Doctors and Politics in An Election Year"; Dr. Thomas F. Frist, a practicing physician, Nashville—Subject: "Public Grievance Committees and Grievance Committee Procedures"; Mr. Dan E.

McGugin, Jr., a member of the Tennessee Bar Association and an outstanding attorney, will speak on the subject "Legal Pitfalls in Medicine—Malpractice—How to Avoid Them"; Mr. Leo E. Brown, Chicago, Director of Public Relations of the AMA,—Subject: "The Goose Hangs High"; Mr. Loye W. Miller, Knoxville, Editor of the *Knoxville News Sentinel*—Subject: "Teamwork Between the County Medical Society and the Press"; Dr. Percy E. Hopkins, Chicago, Chairman of the AMA's Council on Prepaid Health Insurance Plans—Subject: "Current Trends and What to Expect in Health Insurance"; Colonel Earl C. Lowry, Washington, Assistant Executive Director of Dependents Medical Care, Dept. of Defense—Subject: "Comments on Experiences with the Medicare Program."

With the above program, it is believed that this one-day conference will be one which will be informative for every county and state officer. The discussions of this conference can be taken back home to every county medical society in the state and be of tremendous value during the days ahead. It is hoped that every component society will be represented by its Secretary, President, and Delegates, as well as other officers. State officers and committeemen are particularly urged to be present, as well as members of the House of Delegates, to insure wide dissemination of the topics under discussion. Although this is called the State and County Officers Conference, any member of the Association is cordially invited to attend, as well as representatives from the specialty groups, woman's auxiliary and related organizations to TSMA.

You are urged to budget your time for meetings so that this one day may be included as I believe you will be delighted with the timely and useful information which is condensed and will be brought to you.

Paul Baird

THE JOURNAL

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DECEMBER, 1957

EDITORIAL

PEPTIC ULCER DUE TO DRUG THERAPY

The etiologic factors responsible for the development of peptic ulcer in man are multiple and their relative importance is difficult to assess. Individual susceptibility must be considered otherwise the incidence of peptic ulcer would greatly exceed the usual estimate of 5 to 10 per cent. The tendency of certain therapeutic agents to induce gastrointestinal ulceration represents an increasingly important cause of peptic ulcer in man. Kirsner of Chicago has recently reviewed his observations concerning drug induced peptic ulcer.¹

Peptic ulcer results from failure of the gastroduodenal mucosa to withstand the digestive action of acid gastric juice. Apparently two mechanisms are important: (1) the presence of HCl in the gastric content, and (2) lowered resistance of the stomach

and duodenum. In duodenal ulcer excessive production of HCl and pepsin appears to be the dominant factor. In gastric ulcer although HCl secretion is normal or low, it is essential to the process. However, diminished tissue resistance seems to be the primary factor in ulcers of the duodenum. The mechanism of the gastric hypersecretion in duodenal ulcer seems to be neurogenic or vagal in origin. The causes of decreased tissue resistance are not clearly defined; presumably they concern the protective mucus barrier of the stomach, the regenerative capacity of the mucosa, the vascularity of the mucosa and perhaps intracellular enzyme systems.

Certain ulcers develop on the basis of acid-pepsin digestion of vulnerable areas in the gastroduodenal mucosa. Compounds such as Mecholyl, Priscoline, histamine and reserpine produce gastric secretory stimulation, and ulcers developing under these circumstances result from continuous and prolonged contact of excessive amounts of HCl with the stomach and duodenum.

Other ulcers result from the lowered tissue resistance induced by such drugs as cinchophen, salicylates and Butazolidin. These drugs apparently produce severe hemorrhage and erosive gastritis and duodenitis. Inflammation lowers tissue resistance by destruction of the epithelium, especially the mucus-secreting cells. As gastric acidity increases there is the development of a peptic ulcer. Certain drugs such as caffeine appear to include both the tissue and acid components, but it is probable that no drug containing caffeine contains enough caffeine to produce ulceration. However, the ingestion of 10 to 15 cups of coffee (20 to 30 grains of caffeine) may be a contributory influence in causing or reactivating peptic ulcer in man.

The ulcers complicating the use of ACTH and the adrenal steroids seem to represent a more complex process. It is possible that the hypothalamus, pituitary and adrenals may be implicated in the development of such ulcers. Certainly the evidence is poor concerning the overproduction of HCl in patients receiving ACTH or adrenal steroids. The frequency with which gastric ulcers develop is compatible with the normal or low

¹Kirsner, Joseph B.: Drug-Induced Peptic Ulcer, Ann. Int. Med. 47:666, 1957.

levels of HCl rather than hypersecretion. There is no evidence supporting the view that adrenocortical hyperactivity is a primary mechanism in the usual peptic ulcer of man.

The normal or low secretion of HCl during steroid therapy, the substantial number of gastric ulcers, the increased incidence of hemorrhage and perforation and occasional perforations elsewhere in the digestive tract suggests the importance of lowered tissue resistance in the pathogenesis of the lesions. The possible serious effects of adrenal compounds upon the normal or intact stomach and duodenum have not been fully investigated.

Certain medications seem to be closely associated with peptic ulceration and gastrointestinal bleeding. Salicylates and Butazolidin may produce lesions directly within 6 to 12 hours of the onset of therapy. Muir and Cossar² reported that among 318 patients with peptic ulcer, 110 related the symptom of heartburn to the ingestion of salicylates, and approximately one-third of 166 patients with hematemesis had taken aspirin within 6 hours of the bleeding. These observations establish salicylates as an important cause of gastroduodenal ulceration and bleeding in man. The incidence of these complications must be relatively low in view of the enormous quantity of salicylates taken daily. Ulcers have also been reported following the intake of large quantities of reserpine by mouth or the parenteral administration of reserpine.

It must be remembered that all ulcers that develop during drug therapy are not induced by the drug therapy. It has been shown previously that rheumatoid arthritis is often associated with peptic ulcer. Since salicylates, Butazolidin, cinchophen and adrenal steroids are often used in the treatment of rheumatoid arthritis, they may at times be blamed for ulcerations which might have occurred regardless of therapy. In like manner, many musculoskeletal disorders are associated with emotional problems, and the drug used for the musculoskeletal disorder may be blamed unnecessarily. However, there is no doubt that all

of these drugs are responsible at times for the development of peptic ulcer. The potential ulcerogenic properties of numerous drugs must be borne in mind when such drugs are used in treatment. The hazard seems greatest with compounds prescribed in the management of rheumatoid arthritis and musculoskeletal disorders. Excessive administration of ulcerogenic drugs obviously is undesirable. Effective control of the gastric acidity with diet, antacids and anticholinergic compounds is indicated when the use of these drugs seems unavoidable. Fortunately, the lesions usually respond promptly to adequate antacid therapy even when the offending drug cannot be discontinued.

Each clinician should have an awareness of the potential dangers of these ulcerogenic drugs. Certainly consideration of the possibility of drug-induced peptic ulcer should aid in preventing serious gastrointestinal problems, permit effective treatment of complications, and perhaps clarify the cause of otherwise obscure gastrointestinal distress and bleeding.

A. B. S.



Special Item

Bills Before Congress

Many measures of importance to the medical profession are still in the hopper of the National Congress, including the proposal to add health insurance to the Social Security program.

Legislation of importance to medicine, including two considered eminent threats to free medical practice are to be considered by Congress when it convenes January 7, 1958.

The legislation consists of bills introduced in, and carried over from the 1957 session. Further it is expected that the forthcoming session will bring in a large number of new health care bills. It is of paramount importance that physicians throughout Tennessee familiarize themselves with two bills in particular, namely, the Forand bill (HR 9467) and the Kean bill (HR 8883).

The following is a discussion of the highlights of these two important bills together

²Muir, A., and Cossar, I. A.: Aspirin and Ulcer, Brit. M. J. 2:7, 1955.

with others that should be watched by the medical profession in the 1958 Congress. It is urged that every doctor in Tennessee study these measures and contact his representative or senator now while they are home and make your feelings known about these important measures affecting medicine.

The Forand Bill

Forand's bill has the support of such influential persons as AFL-CIO President Tom Meany. It would amend the Social Security Act to (1) initiate hospital and nursing care and surgical payments for persons eligible for retirement or survivorship benefits under OASI; (2) increase earnings formula to tax the first \$6,000 of a person's income (instead of the present \$4,200 ceiling), and (3) increase dollar benefits payable to workers, their dependents and survivors.

The bill would increase the OASI tax rate a half per cent on employees and employers alike, and three-fourths of one per cent on the self-employed under OASI. By 1975 the tax rate for employees would be 4.75 per cent, a like rate for employers for a total of 9.5 per cent of wages up to \$6,000. The tax rate for self-employed would be 7.125 per cent, and maximum payment would be \$427.50 a year.

Included in the proposed medical benefits are cost of semi-private hospital care for 60 days of any year and 120 days of nursing home care in any year.

Limits Choice of Doctor

The bill also would finance the cost of necessary surgery (not elective surgery), provided that the surgeon selected by the beneficiary is certified by the American Board of Surgery or is a member of the American College of Surgeons (except in cases of emergency). For oral surgery, the patient would be allowed to select a duly licensed dentist of his choice.

Physicians would be paid fees prescribed by the Secretary of Health, Education and Welfare, and participating hospitals would be required to enter into an agreement for payment with the government.

The Kean Bill

The Kean bill would, among other things, provide compulsory Social Security coverage for physicians, benefits for dependents of disabled workers, payment for rehabilitation services, and increased benefits for workers who delay retirement.

It would raise maximum family benefits from the present \$200 a month to \$271.25. It would raise the total amount of wages subject to tax

from the present \$4,200 annually to \$4,800. After 1975, a self-employed physician at the scheduled rates (6.375 per cent) would pay annually to the OASI trust fund \$306.

Several other bills introduced provide different approaches to the same benefits.

Other Bills

Other pending bills physicians should watch when the 1958 session convenes include:

Compulsory Health Insurance (S.844, H.R. 3764)

—A 1957 version of the old and rejected national compulsory health insurance measures of 1948, the sponsors being Senator Murray (D., Mont.) and Rep. John Dingell, Jr. (D., Mich.).

Federal Workers Health Insurance (S.2339 and others)—Provide for a voluntary contributory health insurance program for federal employees and their dependents, both basic and major medical coverage.

Overseas Federal Medical Care (H.R. 6141)

Provides health and medical services for U.S. civilians overseas who are employed in government jobs, and also would cover their dependents.

Federal Medical School Aid (H.R. 6874)—Authorizes federal grants to medical schools and research facilities for construction of classrooms and laboratories for teaching.

Federal Loans to Hospitals (H.R. 1979)—For those hospitals interested in construction loans rather than Hill-Burton grants, these bills would authorize long-term government loans.

Reinsurance (S. 1750 and H.R. 6506)—Permit pooling by various insurance companies without regard to the anti-trust laws for purpose of encouraging new experiments in health insurance coverage.

Aid for the Aged (H.R. 383 and others)—Authorize grants for studies and projects for the aged.

Federal Advisory Health Council (H.R. 2435 and others)—Establish a Federal Advisory Council on Health, as recommended by the Hoover Commission.

Labeling for Household Use (H.R. 7388 and others)—Regulate the labeling of hazardous substances intended for household use.

—J. E. B.

DEATHS

Dr. Frank Sidwell, Sr., 53, Livingston, died October 15th, from injuries received in an automobile accident. The accident occurred near Livingston.

Dr. Samuel Thomas Chapman, 79, Halls, died October 28th at his home in Memphis.

Dr. J. Peery Sloan, 54, Jamestown, died November 9th at Presbyterian Hospital in Knoxville.

PROGRAMS AND NEWS OF MEDICAL SOCIETIES

Nashville Academy of Medicine and Davidson County Medical Society

The Society held its regular meeting on November 12th at Vanderbilt University Hospital, with a dinner at 6:45 p.m. and the scientific program following in the Amphitheatre. The program consisted of the Board of Director's nominations for president-elect, secretary-treasurer, and delegates to the Tennessee State Medical Association's House of Delegates. Other business discussed was a proposed assistance fund for medical students, Academy meetings and programs and other Academy matters.

Knoxville Academy of Medicine

The Society met for its regular monthly meeting on November 12th in the Academy of Medicine Building. The scientific program consisted of a paper given by Dr. David H. Baker, assistant professor of pediatrics and instructor in radiology, Cornell University Medical School, New York, on "Some Aspects of Neonatal Radiology." An interesting case report was given by Dr. John Dougherty. The annual election of officers was held.

Chattanooga-Hamilton County Medical Society

The Society's October 31st program was held in conjunction with the Postgraduate Symposium at Athens, presented by the Tennessee State Medical Association. The subject was "The Acute Heart—Management of Acute Heart Diseases and Coincidental Surgery on the Acute Cardiac Patient."

The Society's meeting was conducted on November 7th in the Interstate Auditorium. The scientific program consisted of a paper by Dr. Andrew B. Jones, associate professor of neuropsychiatry, Washington University, St. Louis. His subject was "A Few Remarks About Man, and Some Methods of Treatment and Drugs."

On November 13th the annual society dinner-dance was held at the Chattanooga Golf and Country Club.

Bradley County Medical Society

Members of the Society and their wives, together with a number of out-of-town physicians and their wives, were entertained recently at a dinner in the Colonial Room of the Tennessee Restaurant. The host was Dr. J. L. McClary.

Consolidated Medical Assembly

Dr. Joe McCaughan, assistant chief of surgery at Kennedy Hospital at Memphis, addressed the West Tennessee Consolidated Medical Assembly on November 5th at the New Southern Hotel. His subject was "Practical Uses of Arterial Grafts." Dr. Leon Holmes led the discussion on the subject.

Greene County Medical Society

The Greene County Medical Society and the Greene County Bar Association held a joint meeting on October 14th at the Elks Lodge. The meeting was well attended. The guest speakers were Dr. Edward Brading and Mr. James A. Weller, attorney, both of Johnson City. The film, entitled "The Medical Witness," was shown after which talks on the subject were made by Dr. Brading and Mr. Weller.

Memphis-Shelby County Medical Society

The Society held its regular meeting on October 1st in the Auditorium of the Institute of Pathology. The scientific program was as follows: 1. Clinical Research, Dr. I. Frank Tullis; 2. Therapy of Rheumatoid Arthritis, Dr. Glen M. Clark, discussed by Dr. Jean Hawks, and Dr. J. C. Hamilton; 3. Diagnosis of Angina Pectoris, Dr. Thos. N. Stern, discussed by Dr. I. Frank Tullis and Dr. Otis Warr.

Roane County Medical Society

The Society's November 26th meeting was held in the Conference Room of the Medical Division of ORINS. The scientific program consisted of a paper entitled "Treatment of Disorders of the Thyroid Gland" by Dr. Dwight E. Clark, Professor of Surgery at the University of Chicago.

Davidson County Physicians and Attorneys Hold Joint Clinic

Middle Tennessee physicians and attorneys heard mutual problems discussed on October 22nd at the third medico-legal

clinic sponsored by the Nashville Academy of Medicine and the Nashville Bar Association. The session was conducted at the Hermitage Hotel.

The Davidson County Medical Examiner system was discussed by District Attorney General, Harry Nichol. Chemical tests for intoxication were explained by Asst. Dist. Atty. Gen. Paul Bumpus and Dr. Alan D. Bass, professor of pharmacology at Vanderbilt University School of Medicine.

The new Tennessee Interprofessional Code, which sets forth agreements for cooperation between physicians and attorneys, was discussed by Mr. William Carpenter of the bar association, and Dr. George K. Carpenter.

The film entitled "The Medical Witness" was viewed by the group. Mr. Wilson Sims, attorney, presented practical borderline situations in professional liability cases.

"Traumatic Neurosis" was described by Dr. Albert R. Lawson. The final topic on the program was "Whiplash" injuries presented by Dr. Don Eyler. Mr. Harlan Dodson, president of the bar association, and Dr. William O. Vaughan, president of the academy, presided.

NATIONAL NEWS

The Month in Washington

Just how much money does the federal government spend on health programs and just how is it spent?

The answers are not easy to come by, but each year the Washington Office of the American Medical Association gathers together all of the bits and pieces of information needed to explain where and how the U.S. is involved in medicine, from cancer research to treating workmen's sniffles. Some of the material comes directly from appropriation bills, but where programs and projects are not identified there, the responsible government officials are consulted for the breakdown.

For all health and medical purposes, the U.S. during the current fiscal year is spending approximately two and one-half billion dollars. This—despite months of economy talk in the administration and in Congress

earlier in the year—is about the same figure as last year.

The survey also unearthed some interesting sidelights that show perhaps more graphically than the dollar marks the extent to which federal medical activities are spreading among almost all agencies and departments.

At least 23 U.S. cabinet departments and independent agencies are engaged in some medical operations, and there are at least 79 separate health-medical activities worthy of listing and describing. Many of these in turn are responsible for scores and scores of individual operations.

This year the relatively new Department of Health, Education and Welfare tops the list of all departments in health-medical spending with \$849,394,800, bounding past Veterans Administration and Defense Department, which up to now have been at the head of the column. VA is spending \$849,374,000, within the \$20,000 of HEW, but Defense Department this year drops back more than \$80 million, to \$702,000,000, largely because the decreasing size of the armed forces means fewer uniformed men and dependents to care for.

Next comes Atomic Energy Commission, but its medical spending of \$40 million—mostly for research—is far down the column from the Big Three.

International Cooperation Administration has \$37 million to help our friends overseas to raise their medical standards. The other 19 departments and agencies have substantially less, the last item being the \$12,145 allocated to the physician entrusted with keeping members of Congress as healthy as possible.

For the first time the AMA report compiles information on the programs in which the U.S. participates for payments because of disability. Among those receiving these payments are veterans, disabled beneficiaries under social security, disabled railroad workers, etc.

Because this money is not all federal and comes from several tax sources—OASI and railroad payroll deductions as well as general U.S. revenue—it is not added to other federal medical costs in the AMA study. For the current fiscal year the total of these

"payments for disability" is about \$3.2 billion. (*From the Washington Office of the American Medical Association.*)

Announcements on Opening Office— Ethical or Unethical

Here's a question frequently asked by a physician—usually the young man just starting practice: "To whom may announcements concerning the opening or removal of a doctor's office be made and is there a prescribed form for such announcements?"

Here's what the Judicial Council of the AMA has to say on this double-barrelled question:

On opening an office a physician may properly send announcements to his colleagues, to his intimate personal friends not in the medical profession, and to those persons in allied fields with whom it may reasonably be expected he will associate. Announcements of the opening of an office should not be mailed indiscriminately to all persons in the community, nor should commercial mailing lists be utilized. A brief news item carried in the local press, in itself, is not unethical. Local societies may, however, in the exercise of good judgment determine and fix limitation in this regard.

On removing an office a physician may properly advise of this fact to the same persons and in the same manner as he may announce the opening of an office. In addition, he may, and should, advise his patients of the essential facts concerning this removal. In any case, the physician is well advised to check with the appropriate officer or committee of his local medical society in order to conform his conduct with local practice.

No form has been approved by the American Medical Association. Under the Principles of Medical Ethics and in keeping with the ideals of the profession, it would seem that no objection would be made to a simple statement of fact, without undue embellishment. . . . In all cases the local society can be looked to for an authoritative opinion.

MEDICAL NEWS IN TENNESSEE

University of Tennessee College of Medicine

The appointment of Dr. James W. Culbertson, professor of medicine and director of the cardiovascular research laboratories at the State University of Iowa, College of Medicine, as professor of medicine at the University of Tennessee College of Medicine has been announced. Dr. Culbertson's appointment will be effective next spring.

★

A postgraduate course on Industrial Medicine was presented recently, under the direction of Dr. William A. McClellan, of the Department of General Practice. Industrial preventive medicine, industrial hygiene and disability was covered by lectures and demonstrations. Clinical problems in industrial medicine also were demonstrated. Guest lecturers were: Dr. J. M. Bosworth, division medical director, loss prevention medical service, Liberty Mutual Insurance Company in Atlanta; Herman Brown, Claims Manager, Atlanta division of Liberty Mutual Insurance Co.; Dr. O. M. Derryberry, director of health services, TVA, Chattanooga.

Medical Studies to Cost More

It's going to cost more to become a doctor, dentist and pharmacist at the University of Tennessee Medical Units. The increase in student maintenance fees was announced recently by the University of Tennessee College of Medicine. The new fees are effective with enrollment for the winter quarter.

For out of state medical students, the cost was upped from \$225 to \$300. For students whose parents are residents of Tennessee, a quarterly reduction of \$115 is allowed, making the net increase for them \$35 a quarter.

Vanderbilt University School of Medicine

Two professors at the school have been awarded a \$45,000 grant by the Nutrition Foundation, Inc., for a three year research project on fat metabolism. The study con-

sists of utilization and synthesis of lipids in children and animals. The grant will allow an increase in personnel for the coordinated program of studies.

Tennessee Conference for Handicapped Children

The problems of handicapped youngsters, medical, social, and educational, will be the subject of a two day meeting in Memphis next March.

More than 800 doctors, welfare workers and others interested in the problems are expected to attend the Second Tennessee Conference for Handicapped Children March 7 and 8 at the University Center in Memphis. The Conference is sponsored and financed by the Nemours Foundation of Wilmington, Delaware and coordinated by the Junior League of Memphis.

Nationally known doctors will speak and there will be panel discussions on Clinical Services, In Patient Services and Personnel. There will also be tours of local treatment centers. Among subjects to be discussed are cerebral palsy, epilepsy, mental retardation, muscular dystrophy, emotional and social disturbance, orthopedic problems, speech and hearing, heart disease.

Serving on the Steering Committee of the Conference are Drs. James G. Hughes, Alvin J. Ingram, Louis D. Britt, L. M. Graves, Robert G. Jordan, William J. Von Lackum. Among members of the advisory committee for the Conference are Drs. Blake Arnault, Leland Atkins, Randolph Batson, John Richard Glover, Sr., T. S. Hill, John Davis Hughes, R. H. Hutcheson, O. E. Hyman, Raphael N. Paul, Albert G. Randall, Ralph O. Rychener and Jules Seaman.

Dr. A. R. Shands, medical director of the Alfred I. duPont Institute of the Nemours Foundation, Wilmington, Del., will give the introduction and greeting at the first session of the Conference.

Dr. Amos Christie will give a summary of the First Tennessee Conference for Handicapped Children, held last spring in Nashville. Anyone who is interested is welcome to attend the Conference, and further information may be obtained from the Junior League of Memphis, 2711 Union, Memphis.

Memphis Thoracic Society

The Memphis Thoracic Society, an organization of sixty Memphis and West Tennessee Thoracic surgeons and Medical Chest physicians, have elected officers for 1958. They are: Dr. Felix A. Hughes, Jr., president, succeeding Dr. Franklin H. Alley. Others elected included Dr. Otis S. Warr and Dr. Glenn E. Horton.

Any physicians interested in the medical-surgical aspects of thoracic disorders are welcome to attend any subsequent meetings and information may be obtained from the Secretary, Memphis Thoracic Society, 4915 Mockingbird Lane, Memphis 17, Tennessee.

Influenza Vaccine

Dr. R. H. Hutcheson, Commissioner of Public Health in Tennessee, requests that it be made known to all physicians in the state that effective December 1, 1957, 400 cca units will be required in influenza vaccine in lieu of the present 200 cca standard. This change is based on recommendation by expert technical advisors as a result of improved production methods which make possible production of more effective vaccine.

Middle Tennessee Medical Association

The one hundred twenty-sixth Semi-annual Meeting was held on November 21, at Winchester, Tennessee, under the presidency of Dr. Claude C. Snoddy, of Tullahoma. The program was as follows:

"The Problem of Hernias, Hydroceles and Undescended Testes in Children," by Dr. George Holcomb, Nashville; "Treatment of Cardiac Arrhythmias," by Dr. Crawford Adams, Nashville; "Snake Bite," by Dr. Henry Kirby-Smith, Sewanee; "Diffuse Pulmonary Fibrosis—Differential Diagnosis and Management," Dr. James Callaway, Nashville; "Regional Enteritis," by Dr. John Farringer, Nashville; "Classification and Treatment of Burns," by Dr. Roscoe Kash, Lebanon; and "Bladder Neck Obstructive Disease in Children," by Dr. Tom E. Nesbitt, Nashville.

Tennessee State Obstetrical and Gynecological Society

Following preliminary discussion, the following delegates from their specialty groups

met in Nashville on October 30 to organize the new Society: Dr. Harry Jones, Chattanooga; Dr. Mike Roach and Dr. Robert Ruch, Memphis; Dr. Roy Douglas, Jackson; Dr. Harry Jenkins and Dr. Perry Williamson, Knoxville, and Dr. Joe Anderson and Dr. Homer Pace, Nashville. Dr. Frank Whitacre acted as Chairman.

A Constitution and By-laws were tentatively approved pending the first meeting of the Society, following:

ARTICLE I. Section 1. The name of the Society shall be the Tennessee State Obstetrical and Gynecological Society.

Section 2. The object of this Society shall be the promotion of knowledge and the welfare of Obstetrics and Gynecology in Tennessee.

ARTICLE II. Section 2. The active fellows of the Society shall have the following qualifications. (a) graduation from a medical school which is satisfactory to the executive committee, (b) limitation of his practice or professional activities to Obstetrics and/or Gynecology, and (c) evidence of high ethical and professional standing as determined by the fellows in his area.

ARTICLE IV. Section 1. There shall be one meeting per year held at the time and place of the annual meeting of the Tennessee State Medical Association. The purpose of the annual meeting shall be the election of officers and other business, in addition to a scientific program.

The following are the regional secretaries and membership chairmen:

Nashville:	Dr. Homer M. Pace, Jr. 610 Gallatin Road
Memphis:	Dr. Robert Ruch 899 Madison Avenue
Knoxville:	Dr. Perry Williamson 602 Medical Arts Building
Chattanooga:	Dr. Harry E. Jones 108 Interstate Building

Any doctor in their respective area who limits his practice or professional activities to obstetrics and/or gynecology is eligible for membership in the State Society and may apply to membership chairman of his area. Membership in a local society does not necessarily entitle the physician to membership in the State Society. Therefore any doctor interested in joining the State Society should submit a letter to the regional membership chairman. Applicants will be submitted to the initial membership committee for consideration at the first meeting of the Society in 1958. All eligible doctors are encouraged to attend the first meeting to be held in Gatlinburg for adop-

tion of the Constitution and By-laws and the election of officers.

The program for the business and scientific sessions will appear in the program of the Tennessee State Medical Association.

PERSONAL NEWS

Dr. C. Harwell Dabbs, Knoxville, recently attended the American Association of Medical Clinics meeting where he participated in a panel discussion titled "Causes of Interprofessional Frictions Within Groups and How to Prevent Them." He also attended the Southern Thoracic Surgical Association meeting in New Orleans in November.

Dr. E. Converse Pierce, II, Knoxville, attended the meeting of the Southern Chapter of the American College of Chest Physicians which met jointly with the Southern Medical Association in Miami. He gave a paper on "Chronic Occlusion of Aortic Arch Branches."

Dr. John W. Ellis, Jefferson City, has recently opened an office for the practice of general medicine at Jefferson City.

Dr. Amos Christie, Nashville, has been named to the selection committee for Wyeth Laboratories pediatric residency fellowship.

Dr. J. J. Sohm, Memphis, recently gave a paper entitled "Progress in Medicine" before the Agenda Club, at Whitehaven.

Dr. Alvin J. Cummins, Memphis, has been elected a member of the Central Society for Clinical Research.

Dr. Kenneth Frye, Jasper, has opened his office for the practice of medicine at Jasper.

Dr. John C. Beard, Jr. and **Dr. B. F. Scott**, Memphis physicians, have been named to the staff of the University of Tennessee College of Medicine.

Dr. J. Mansfield Bailey, Watertown, has opened his office for the practice of medicine. He recently moved from Camden.

Dr. Robert J. Barnett, Jackson, announces the opening of his office for the practice of orthopedic surgery.

Dr. Stewart Auerbach, Chattanooga, spoke on the subject "Autopsies" over a television program entitled "Your Doctor Speaking."

Dr. Chas. V. Lindsay, Lawrenceburg, has announced the opening of his office for the practice of medicine in connection with **Dr. R. L. Maddox**.

Dr. Maurice Pruitt, Chattanooga, recently spoke on the television program "Your Doctor Speaking."

Dr. T. H. Roberson, Bonicord community, announces that he will open his office for the practice of medicine in Ridgely.

Dr. Milton S. Lewis, Nashville, has been elected president of the Nashville Obstetrical and Gynecological Society.

cological Society. Other officers elected were **Dr. Homer Pace**, vice-president; **Dr. James Ellis**, secretary and **Dr. Gordon Peerman**, treasurer.

Dr. Robert W. Brandon, Sr., a Weakley County physician for over fifty years, was recently honored on "Dr. Brandon Day" at Martin.

Dr. Raphael E. Bilbrey, Roane County Health Officer for the past seven months, has resigned his position.

Dr. Jesse Lee Williams, Jr., Chattanooga, has entered into the practice of urology with **Dr. Charles W. Hawkins**. Offices will be located in the Doctors Building.

Dr. John E. Neumann, Paris, has been elected a fellow in the American College of Gastroenterology.

Dr. Philip M. Lewis, Memphis, has been elected vice-president of the American Academy of Ophthalmology and Otolaryngology.

Dr. John C. Burch, Nashville, has been elected president of the Society of Pelvic Surgeons.

Dr. John B. Youmans, Nashville, presided at the recent meeting of the Association of American Medical Colleges in Atlantic City.

Tennessee Surgeons recently inducted as Fellows of the American College of Surgeons are **Dr. Milnor Jones**, Athens; **Dr. F. Talmadge Buchanan**, Bristol; **Dr. Parker D. Elrod**, Centerville; **Dr. Charles W. Hawkins** and **Dr. Ira M. Long**, Chattanooga; **Dr. Swan Burrus, Jr.** and **Dr. Charles C. Stauffer**, Jackson; **Dr. James E. Shull**, Kingsport; **Dr. William F. Gallivan, Jr.** and **Dr. Lucian W. Trent**, Knoxville; **Dr. C. Laurence Reid**, Mountain Home and **Dr. Paul Spray**, Oak Ridge.

Dr. Alvin J. Ingram, Memphis, recently addressed the Tennessee Society for Crippled Children and Adults. His subject was "Changing Concepts in Cerebral Palsy."

Dr. Felix A. Hughes, Jr. has been elected president of the Memphis Thoracic Society. He succeeds **Dr. Franklin H. Alley**. **Dr. Otis S. Warr** was elected vice-president and **Dr. Glenn E. Horton**, secretary-treasurer.

The Bells Clinic is the location of a medical group composed of **Dr. Elisha Farrow**, **Dr. Charles N. Hickman** and **Dr. William R. Sullivan**.

Dr. William A. McClellan, Memphis, recently spoke before the Memphis Industrial Nurses Association. His subject was "The Nurses' Changing Role in Industrial Health."

Memphis physicians participating in the program of the American College of Surgeons in Atlantic City were: **Drs. Harwell Wilson**, **Edward H. Storer**, **Joe Campbell**, **Robert Miles**, **Theodore Myre**, **Frank Smythe, Jr.**, **Clarence Baugh** and **David T. Todd**.

Dr. Ray Vincent DePue, Jr., **Dr. George Pate** and **Dr. Charles N. Watts** were appointed recently to the medical staff of the Blount Memorial Hospital.

Dr. Jack C. Smith, Jamestown, has opened his office for the practice of medicine in that city.

BOOK REVIEW

Clinical Toxicology of Commercial Products. Acute Poisoning (Home and Farm). By **Marion N. Gleason**, **Robert E. Gosselin, M.D.**, and **Harold C. Hodge, Ph.D.** 1160 pages. The Williams & Wilkins, Co., Baltimore, Maryland, 1957.

When this book with its rather imposing title, seemingly unrelated to pediatrics, was offered to the reviewer, his impulse was to suggest that it be sent to the Pharmacology Department. About that time there came to the Emergency Room a prostrated child who had swallowed furniture polish. What does it contain? What to do? Furniture polish and 15,000 other products which might be ingested accidentally or suicidally are neatly contained between the covers of this truly remarkable volume. Before the reviewer was convinced concerning its usefulness he kept this volume on his desk for three additional months using it almost daily on hypothetical or real cases of poisoning which came to his attention. It was for exactly this purpose that the authors undertook this prodigious work.

On the frontispiece is an illustrative chart on "How To Use This Manual." This is most helpful to the student, house officer or practitioner who first needs to use these pages.

There is a section entitled "First Aid and General Emergency Treatment" which outlines in logical sequence the steps to be taken from the initial telephone report to the final disposition of a case of acute poisoning. This is "must" reading for everyone who might today or day after tomorrow have to administer to a poisoning case.

Section II contains more than 1000 ingredients in alphabetical order which are commonly found in commercial products used in and around the home and farm. After each ingredient is recorded a toxicity rating.

Section III entitled "Therapeutic Index" summarizes clinical and experimental data on 68 compounds or classes of compounds. These were selected because they typify the toxicology of groups of related substances. Thus acid, digitalis, turpentine, etc., are listed with emphasis on toxicology, symptomatology and treatment.

Section IV entitled "Supportive Treatment in Acute Chemical Poisoning" reviews the effect of various toxic substances on respiration, circulation, central nervous system, gastrointestinal tract and urinary system. There is an excellent section on artificial respiration and electrolyte and water balance which is contained in this division.

The next and largest section is a Trade Name Index. This is the one which contains over 15,000 trade names of products and which is so useful when that phone call comes about Johnny or Mary who has swallowed the furniture polish, ant-paste, or nail polish remover.

Section VI is entitled "General Formulations"

and contains in alphabetical order several hundred formulas for products and preparations commonly found in our households and farms. It is exceptionally useful when these formulas are not listed in the Trade Name Index in Section V. Examples would be lighter fluids, fireplace colors, paint brush cleaners, toilet bowl cleaners, etc.

The last section of the book contains the names and addresses of all manufacturers appearing in the Trade Name Index. These are listed for the convenience of physicians who wish to telephone or write for further information.

The whole book is readable, remarkably easy to use because of its excellent indices. This is a valuable reference volume which should be in every library and certainly in every emergency room. It should be available in any agency which is frequently called upon for emergency help or treatment. This reviewer believes that it should also be at the desk side of every pediatrician or practitioner who is likely to be consulted about children.

AMOS CHRISTIE, M.D.

ANNOUNCEMENTS

The New Orleans Graduate Medical Assembly

The 21st annual meeting of the New Orleans Graduate Medical Assembly will be held March 3-6, 1958 at the Roosevelt Hotel. Outstanding speakers in cardiology, dermatology, gastroenterology, general practice, gynecology, internal medicine, obstetrics, surgery, pathology, pediatrics, radiology and urology will present the program.

Physicians Newly Licensed in Tennessee

Bigbee, Wallace B., Chattanooga
Cunningham, Margaret, Arlington
Davis, James W., Jr., Iowa City, Iowa
Turman, Alfred E., Nashville
Griffin, Newton B., Nashville
Bass, Thomas R., Roanoke, Virginia
White, Shoffner T., Greenville, Miss.
Taylor, Irvin S., Boston, Massachusetts
Kalb, Irvin M., Hollywood, Calif.
Williams, Muriel L., Knoxville
Hatfield, William H., Memphis
Hamman, Jack L., Memphis
Coffee, Amos L., Woodbury
Lindsay, Charles V., Jr., Lawrenceburg
Beatty, James B., Ann Arbor, Michigan
Howorth, Marion B., Jr., Memphis
Grisham, Joe W., Brush Creek

Fankhouser, Russell L., Bristol, Va.
Lovelace, Daniel D., Kingsport
Johnson, Curtis M., Memphis
Pirkle, Thomas H., Blue Ridge, Ga.
Hill, Robert S., Jackson
Treadwell, Tandy W., Jr., Jackson
Lee, Mary A. G., Jackson
Rutledge, Jones F., Jr., Lewisburg

Postgraduate Course in Obstetrics and Gynecology at Vanderbilt University School of Medicine

A one-day course will be presented on Thursday, January 16, 1958, beginning at 9 a.m. The forenoon will be devoted to a review of recent advances in the field of obstetrics. After lunch with a period for questions and answers, the afternoon program will offer discussion of newer technics and thinking in certain phases of gynecology. The course is approved for 6½ hours of Category I credit by the American Academy of General Practice. Tuition is \$15.00 which includes the luncheon. For further information address Department of Postgraduate Instruction, Vanderbilt University School of Medicine.

MAGNETIC REMOVAL OF FOREIGN BODIES

MURDOCK EQUEN, M.D., F.A.C.S.

*Founder and Chief of Staff
of Ponce de Leon Infirmary
Atlanta, Georgia*

The Use of the Alnico Magnet in the Recovery of Foreign Bodies from the Air Passages, the Esophagus, Stomach and Duodenum

Written in an informal, conversational style and abundantly illustrated with roentgenograms, this book can be read with interest by many groups, especially bronchoscopists, pediatricians, general practitioners, gastroenterologists, otolaryngologists, roentgenologists and chest surgeons.

- Describes and illustrates the various modifications the author has made in the original Alnico magnet and the auxiliary apparatus, often of his own design, that he has used
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- Points out DISADVANTAGES, CONTRAINDICATIONS and precautions.

ADV.

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The list of members of the Tennessee State Medical Association is published in compliance with a provision of the Constitution and By-Laws. The data are accurate as of December 10, 1957. They are arranged in the following order:

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List of veteran members.

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Cecil F. Mynatt, Jr.
L. W. Nabers
John L. Pearce
J. W. Richardson
Powell M. Trusler
D. J. Zimmermann
HAMILTON COUNTY
Chattanooga
Chester G. Adams
John W. Adams, Jr.
Julian Adams
C. H. Alper
E. R. Anderson
Harry S. Anderson
J. J. Armstrong
I. L. Arnold
Merton Baker
Robert E. Baldwin
H. B. Barnwell
S. H. Barrett
George E. Beckman, Jr.
Samuel S. Binder
W. Paul Bishop
T. R. Blanks
Robt. W. Boatwright
Robert J. Boehm
Walter E. Boehm
F. B. Bogart
J. W. Bradley
Frank S. Brannen
Beach Brooks
J. C. Brooks, Jr.
Reid L. Brown
James Y. Bryson
Arch H. Bullard
E. F. Buchner, Jr.
W. R. Buttram
W. R. Buttram, Jr.
John R. Cain
James L. Caldwell
Earl R. Campbell
Maurice A. Canon
E. E. Carrier
John P. Carter
Douglas Chamberlain
Cleo Chastain
O. H. Clements
Douglas Collins
Clarence H. Connor
J. Hicks Corey, Jr.
George E. Cox
John M. Crowell
Tolbert C. Crowell
Doyle E. Currey
J. Tom Currey
Thos. H. Curtis
O. M. Derryberry
Robt. G. Demos
James F. Dietrich
Paul H. Dietrich
Richard B. Donaldson

Albert S. Easley
A. F. Ebert
Bruce Elrod
Roht. E. Eyssen
J. R. Fancher
George W. Farris
Richard Van Fletcher
A. C. Ford
Shelton F. Fowler
Guy M. Francis
J. E. Frazier
J. Marsh Frece
O. C. Gass
G. C. Gibson
Robt. H. Giles, Jr.
E. Wayne Gillev
Dean W. Golley
Paul M. Golley
Kenneth N. Gould
Frank B. Graham
Joseph W. Graves
Wm. R. Green
O. D. Groshart
T. A. Grubbs, Jr.
F. Russell Hackney
Robb B. Hagood
Alton G. Hair
R. J. Hall
Foster Hampton, Jr.
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Frank F. Harris
E. F. Harrison
Carl A. Hartung
Chas. W. Hawkins
Freeman C. Hays
Robt. S. Hellman
Raymond D. Henderson
Joseph A. Hennessey, Jr.
H. B. Henning
George Henshall
Homer D. Hickey
John M. Higginson
J. M. Higginbotham
J. F. Hobbs
Richard G. Hofmeister
J. McChesney
Hogshead
Pope B. Holiday, Jr.
C. M. Hooper
Rudolph Hoppe
Don R. Hornsby
W. P. Hutcherson
D. Isbell
Robert E. Ivy
DeWitt B. James
Harry E. Jones
Edward G. Johnson
Franklin Johnson
Joseph W. Johnson, Jr.
J. E. Johnson
J. Paul Johnson
J. Paul Johnson, Jr.
D. B. Karr
Walter P. Keith
Joe B. Killebrew
John J. Killeffer
John E. Kimball, Jr.
Warren H. Kimsey
Clyde R. Kirk
Gene H. Kistler
C. B. Landham
Rudolph M. Landry
M. F. Langston
H. P. Larimore
Chester L. Lassiter
Joseph Lavecchia
Hiram A. Laws, Jr.
Stewart Lawwill
Stewart Lawwill, Jr.
Willis E. Lemon
Philip H. Livingston
H. D. Long
Ira M. Long
Thomas S. Long
Robt. E. Mabe
Hugh B. Magill, Jr.
T. J. Manson
S. S. Marchbanks
Fred E. Marsh
William Marsh
M. A. Meacham
William MacGuire
Harold J. McAlister
Cooper H. McCall
David McCallie
Augustus McGraw
Preston C. McDow
George R. McElroy
J. B. McGee
J. Edward McKinney
H. C. Miles,

Chas. V. Miller
Robert T. Miller
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Fay B. Murphy, Jr.
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Marvin Nathan
Merrill F. Nelson
Cecil E. Newell
E. T. Newell, Jr.
Chas. H. Paine, Jr.
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A. M. Patterson
R. L. Patterson
E. White Patton
J. B. Phillips
W. Houston Price
Maurice Pruitt
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Maurice Rawlings
Chas. J. Ray
Chas. W. Reavis
W. D. L. Record
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Edward E. Reisman, Sr.
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A. D. Roberts
Gilbert M. Roberts
G. Madison Roberts
Robert C. Robertson
H. A. Schwartz
Clarence Shaw
George W. Shelton
W. J. Sheridan
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Edwin H. Shuck, Jr.
V. F. Shull
Leopold Shumacker
Harold G. Sibold
George Sivis
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Moore J. Smith, Jr.
Stewart P. Smith
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Richard F. Stappenbeck
Eleanor Stafford
Harold Starr
Willard Steele
Willard H. Steele, Jr.
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J. H. Stickley
J. E. Strickland, Jr.
Harry A. Stone
Wesley Stoneburner
Charles L. Suggs, Jr.
J. B. Swafford
C. M. Talbott
Bernard Tepper
Jack Tepper
Guy K. Terrell
Chas. Roberts Thomas
Paul C. Thompson
Robt. C. Thompson
A. S. Ulin
Louis Ulin
Minnie Vance
Wm. E. Van Order
Homer Venters
Gus J. Vlas
O. L. Von Canon
Arthur J. Von Wersowetz
Robert A. Waters
L. Spires Whitaker
S. H. Wood
James C. Wright
George G. Young
Guy Zimmerman
Joseph I. Zuckerman
Collegedale
V. Keith Anderson
Daisy
C. A. Clements
Hixon
Wm. P. Aiken
Robt. J. Pitner
Raymond M. Price
Ooltewah
Eugene M. Ryan
Soddy
Joseph B. Duacke
Ann Hallett

BARDEMAN COUNTY

Bolivar

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H. H. Barham
W. E. Lawrence
Edwin M. Levy
B. F. McAnulty
I. Knox Tate
Chaiborne Williams
(Mbr. Davidson Co. Soc.)

Grand Junction

L. D. Pope

Middleton
W. C. Gibson
Whiteville
P. M. Bishop
Aubrey Richards

BIARDIN COUNTY

Savannah

H. D. Blankenship, Jr.
J. W. Carroll
R. B. Deberry
O. C. Doty
Howard W. Whitaker
T. R. Williams

HAWKINS COUNTY

Bulls Gap

J. E. Kite
(Mbr. Greene Co.)

Church Hill

Warner L. Clark
Robt. E. Keith

Fidson

John M. Pearson

Rogersville

Wm. E. Gibbons
C. C. Johnson
W. H. Lyons

HAYWOOD COUNTY

Brownsville

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W. D. Poston
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John Thornton, Jr.
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HENDERSON COUNTY

Lexington

R. M. Conger
C. J. Huntsman
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HENRY COUNTY

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Arthur Duntap
R. Graham Fish
I. H. Jones
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Kenneth G. Ross
I. Ray Smith
C. D. Wilder

HICKMAN COUNTY

Centerville

Parker D. Elrod
(Mbr. Davidson Co.)
Ogle Jones
(Mbr. Davidson Co.)
E. W. McPherson
(Mbr. Davidson Co.)

HOUSTON COUNTY

Erin

C. H. Atkins
(Mbr. Montgomery Co.)

*In Service

O. S. Luton
(Mbr. Montgomery Co.)

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H. C. Capps
Autry C. Emmert
Arthur W. Walker

JACKSON COUNTY

Gainesboro

W. T. Anderson
L. R. Dudley
Jack S. Johnson

JEFFERSON COUNTY

Dandridge

Sam D. Sullenberger
(Mbr. Hamblen Co.)

Jefferson City

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(Mbr. Knox Co.)
Sam C. Fain
(Mbr. Hamblen Co.)
Frank Milligan
(Mbr. Hamblen Co.)
Estle P. Muncy
(Mbr. Hamblen Co.)

Strawberry Plains

Robert W. Creech
(Mbr. Knox Co.)
R. M. Webster
(Mbr. Knox Co.)
White Pine

E. Dale Allen
(Mbr. Hamblen Co.)
E. R. Baker
(Mbr. Hamblen Co.)

JOHNSON COUNTY

Mountain City

Paul J. Bundy
R. O. Glenn

KNOX COUNTY

Concord

Malcolm Cobb
R. H. Duncan
B. D. Goodge

Corryton

A. D. Simmons

Fountain City

J. Gordon Smith

Knoxville

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I. Edward Acuff
Robert L. Akin
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Floyd N. Bankston
Spencer Y. Bell
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Chas. W. Black
Wade H. Boswell
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Robert Brashear
Robert J. Brimi
Clayton M. Brodine
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Horace E. Brown
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Richard Butler
John H. Burkhardt
J. Ed Campbell
P. H. Cardwell
C. S. Carlson
Frederick W. Carr
L. G. Caylor
Jack Chesney
H. Warren Chesney
H. S. Christian
H. E. Christenberry, Jr.

K. W. Christenberry
W. F. Christenberry

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Edward S. Clayton
H. G. Coker
I. Reid Collman
Margherita C. Cook
Sam M. Cooper
M. L. Courtney
James B. Cox
William R. Cross
Miles S. Crowder
J. P. Cullum
H. K. Cunningham
C. Harwell Dabbs
John H. Daugherty
Daniel Davis
Oliver DeLozier
R. V. DePue, Jr.
W. A. DeSautelle
A. W. Diddle
Sheldon Domm
W. F. Dorsey
James E. Downs
R. N. Duffy, Jr.
Chas. R. Earnest, Jr.
E. M. Edington
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Mark P. Fecher
George H. Finer
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(Mbr. Hamilton Co.)
Wm. F. Gallivan
Frank B. Gaylon, Jr.
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George L. Gee, Jr.
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M. L. Hefley
N. A. Henderson
George G. Henson
Zelma L. Herndon
Howard K. Hicks
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Hubert C. Hill
Jesse C. Hill
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Oliver W. Hill, Jr.
Victor Hill
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Howard, Jr.
Moses W. Howard
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Perry M. Huggin
Oren W. Hysman, Jr.
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Geo. Inge
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W. J. Irwin
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Harry H. Jenkins
Francis S. Jones
William S. Jones
Margaret Joyce
H. M. Kelso
A. Glenn Kennedy
John O. Kennedy
John E. Kesterson
Victor H. Klein, Jr.
Lamar Knight
Willis F. Kraemer
A. Hobart Lancaster
Robert F. Lash
William M. Law
F. K. Lawson
Robert P. Layman
Robert S. Leach
Walter J. Lee, Jr.
R. J. Lefler
John H. Leshar
Felix J. Line
Frank London
Geo. S. Mahon
Margaret Maynard
Bruce M. McCampbell
Roy McCrary
A. R. McCullough
M. D. McCullough

Alfred F. Miller
Edwin E. Miller
Foy B. Mitchell
John F. Mohr
Arthur Moler
Ralph H. Monger
J. L. Montgomery
John D. Moore
Marion Moore
Owen D. Moore
Joel C. Morris
J. F. Morrow
Arthur J. Muller
G. E. Murray
William S. Muse
J. B. Naive
Carl A. Nelson, Jr.
H. L. Neuenschwander
Robert W. Newman
Eugene P. Niceley
Hazel M. Nichols
Ralph Nichols
G. T. Novinger
Elvin B. Noxon
Kenneth A. O'Connor
Harry K. Ogden
Homer C. Ogle
B. M. Overholt
Nicholas D. Pappas
Robert F. Patterson, Jr.
F. H. Payne
E. Converse Peirce
Ira S. Pierce
Herschel Penn
Jarrell Penn
H. Dewey Peters
B. F. Peterson
Cecil E. Pitard
S. Joe Platt
Herbert L. Pope
W. W. Potter
William F. Powell
Bruce R. Powers
Wilson W. Powers
H. Hammond
Pride
Thomas C. Prince, Jr.
James C. Prose
J. B. Purkall, Jr.
John A. Range
Joe L. Raulston
Freeman Rawson
W. Gilmer Reed
Wm. H. Reeder
Paul D. Richards
N. G. Riggins
Frank P. Rogers
Wm. K. Rogers
Kenneth Rule
Richard C. Sexton
I. H. Saffold
Wm. A. Shelton
Alex B. Shipley
Elton E. Shouse, Jr.
Kenneth Shoemaker
E. Chas. Siemknecht
Frank J. Slemmons
Chas. C. Smeltzer
E. B. Smith (Mbr. Anderson-Campbell)
Joe T. Smith
Vernon I. Smith
W. E. Smith
John R. Smoot
James L. Southworth
J. M. Stockman
J. Hooper Stiles, Jr.
Thos. F. Stevens
Wm. K. Swann, Jr.
E. L. Tanze
George W. Tharp
D. R. Thomas
Philip Thomas
Wm. M. Tipton
Lucian W. Trent
Geo. M. Trotter
M. Frank Turney
Sidney L. Wallace
C. L. Walton
R. G. Waterhouse
David H. Waterman
Alvin J. Weber, Jr.
Roy A. Wedekind, Jr.
Fred West
Roger E. White
Richter H. Wiggall
Richard B. Willingham
G. A. Williamson, Jr.
Perry Williamson

Leon J. Willien
J. D. Winebrenner
R. B. Wood
James P. Woiden
Vincent T. Young
Eugene G. Zachary
Charles R. Zirkle
George A. Zirkle, Jr.

Mascot

H. V. Anderson

Powell Station

L. F. Cruze
LAKE COUNTY

Ridgely

W. B. Acree

Tiptonville

J. R. Holefield
W. T. Kaney
E. B. Smythe

LAUDERDALE COUNTY

Halls

J. G. Olds
(Mbr. Dyer, Lake & Crockett)

Ripley

W. E. David
J. L. Dunavant
S. L. Nunn
Landrum S. Tucker
P. W. Walker
Charles R. Webb

LAWRENCE COUNTY

Lawrenceburg

V. H. Crowder
W. O. Crowder
J. W. Danley
Rhett G. Danley, Jr.
(Mbr. Putnam Co.)
Boyd P. Davidson
Leo C. Harris, Sr.
L. B. Molloy
V. L. Parrish
Carson E. Taylor

Loretto

*Ray E. Methvin
M. H. Weathers

LEWIS COUNTY

Hohenwald

William E. Boyce
(Mbr. Maury Co.)
W. C. Keaton
(Mbr. Maury Co.)

LINCOLN COUNTY

Fayetteville

L. M. Donaldson
William D. Jones
Ben H. Marshall
R. E. McCown
J. V. McCady
T. A. Patrick, Jr.

LOUDON COUNTY

Lenoir City

Harold D. Freedman
(Mbr. Knox Co.)
Hughes Johnson
(Mbr. Knox Co.)
J. A. Leeper
(Mbr. Knox Co.)
R. V. Taylor
(Mbr. Knox Co.)

Loudon

Corrie Blair
(Mbr. Knox Co.)
Samuel A. Harrison
W. B. Harrison
(Mbr. Knox Co.)
Wm. T. McPeake
(Mbr. Knox Co.)
J. R. Watkins
(Mbr. Knox Co.)

MACON COUNTY

Lafayette

C. C. Chitwood, Jr.
E. M. Froedge

Max E. Painter
John R. Smith

MADISON COUNTY

Bemis

Kelly Smythe
Allen N. Williams, Jr.

Jackson

I. G. Anderson
Thomas K. Ballard
C. H. Berryhill
Wm. H. Brooks
Swan Burrus
Swan Burrus, Jr.
Hughes Chandler
Tate B. Collins
Stanley E. Crawford
Wm. G. Crook
G. B. Dodson
J. E. Douglass
Roy A. Douglass, Jr.
F. W. Edwards
Fred M. Friedman
W. T. Fitts
Oliver Graves
W. W. Harrison
Geo. Harvey, Jr.
Henry H. Herron
S. M. Herron
C. L. Holmes
G. B. Hubbard
Leland M. Johnston
Chester K. Jones
G. Frank Jones
Duval H. Koonce
Harold T. McIver
Frank A. Moore
H. N. Moore
Lamb B. Myhr
R. M. Neudecker
John B. Nuckolls
J. C. Pearce
I. E. Powers
John G. Riddler
Wm. H. Roberts
Glen T. Scott
Howard Simpson
Charles C. Stauffer
J. R. Thompson, Jr.
Barbara Truex
S. Allen Truex
Charles F. Webb
George B. Wyatt
Paul E. Wylie
H. R. Yarbrough

MARION COUNTY

Jasper

J. G. McMillan
(Mbr. Hamilton Co.)
David H. Turner
(Mbr. Hamilton Co.)

South Pittsburg

J. B. Havron
(Mbr. Hamilton Co.)
William Headrick, Jr.
(Mbr. Hamilton Co.)
Viston Taylor
(Mbr. Hamilton Co.)

Whitwell

Wm. G. Shull
(Mbr. Hamilton Co.)

MARSHALL COUNTY

Belfast

H. A. Morgan, Jr.
(Mbr. Bedford Co.)

Lewisburg

Kenneth Brown
(Mbr. Bedford Co.)
J. T. Gordon
Hoyt C. Harris
J. C. Leonard
(Mbr. Maury Co.)
Kenneth J. Phelps
(Mbr. Bedford Co.)
W. S. Poirch
J. W. Rutledge
(Mbr. Maury Co.)
Jack S. Springer
(Mbr. Giles Co.)
J. S. Walchop
W. A. Walker

MAURY COUNTY

Columbia

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Wendell C. Bennett
Mildred Casey
William N. Cook
Edward Ewton
Wm. G. Fuqua
C. C. Gardner, Jr.
Daniel Gray, Jr.
Harry C. Helm
Amthrose M. Langa
(Mbr. Henry Co.)
Robin Lyles
Clay R. Miller
James B. Miller
Edwin K. Provost
Warren Rucker
Leon S. Ward
J. W. Wilkes, Jr.
Eleanor Williamson
Watt Yeiser
Thomas K. Young,
Jr.

Mt. Pleasant

G. C. English
Charles Petty
C. D. Walton

McMINN COUNTY

Athens

W. R. Arrants
Charles T. Carroll
L. D. Curtner
R. W. Epperson
C. O. Force
W. Edwin Force
Milnor Jones
J. A. Powell, Jr.
Edward B. Rank
Helen M. Richards
A. W. Shelamar
I. H. Shields

Englewood

Robt. G. Hewgley

Etowah

S. Boyd McClary, Jr.
John C. Sharp
Oscar L. Simpson
H. P. Whittle

*McNAIRY**County**Selmer*

T. N. Humphrey
W. A. Phillips
James Smith
Montie E. Smith, Jr.

MEIGS COUNTY

Decatur

William Davis
(Mbr. McMinn Co.)

*MONROE**County**Madisonville*

Holden W. Hooper
R. C. Kimbrough
F. Houston Lowry
Horace M. McGuire

Sweetwater

J. H. Barnes
W. J. Cameron
Joe H. Henshaw
D. F. Heuer, Jr.
T. A. Lowry
J. E. Young

Tellico Plains

David M. Hadley

MONTGOMERY

*County**Clarksville*

Edward R. Atkinson
Carlos B. Brewer
E. P. Cutter
Sam M. Doane, Jr.
M. M. Green
V. H. Griffin
B. T. Iglehart
Howard R. Kennedy
J. H. Ledbetter, Jr.
Arthur A. McMurray
William G. Lyle

*In Service

Jack Ross
Byce F. Runyon
A. F. Russell
M. L. Shelbv
Marion E. Spurgeon
Robt. H. Tosh
Charles A. Trahern
Troy A. Walker
Paul E. Wilson
R. M. Workman

Woodlawn

Cecil C. Lawhorn

MOORE COUNTY

Lynchburg

F. Harlan Booher
(Mbr. Lincoln Co.)

*MORGAN**County**Oakdale*

J. H. Carr
(Mbr. Roane Co.)

OBION COUNTY

Hornbeak

R. G. Latimer

Kenton

Alden H. Gray
(Mbr. Consolidated
Cos.)

Obion

Leon I. Runyon

Troy

Chesley H. Hill

Union City

J. Kelly Avery
M. A. Blanton, Jr.
Stevens Byars
H. W. Calhoun
Wm. N. Carpenter
Dan C. Gary
B. O. Garner
R. L. Gilliam, H.
E. P. Kingsbury, Jr.
R. G. Latimer, Jr.
E. McCall Morris
James W. Polk
Malcolm T. Tipton
O. A. Zeller, Jr.

*OVERTON**County**Livingston*

H. B. Nevans

Denton D. Norris

PERRY COUNTY

Linden

B. L. Holladay
Gordon H. Turner,
Jr.

*PICKETT**County**Byrdstown*

Malcolm E. Clark
(Mbr. Overton Co.)

POLK COUNTY

Benton

John H. Lillard
(Mbr. McMinn Co.)

Copperhill

W. Y. Gilliam
(Mbr. Hamilton Co.)
H. H. Hyatt
(Mbr. Hamilton Co.)
J. T. Layne
(Mbr. Hamilton Co.)
W. C. Zachary, Jr.
(Mbr. Knox Co.)

*PUTNAM**County**Algood*

J. T. Moore, Jr.

Cookeville

Jack L. Clark
J. T. Deberry
Kenneth L. Haile
Wm. A. Hensley, Jr.
W. A. Howard
Jere W. Lowe
William Mattson

Thurman Shipley

Wm. S. Taylor
J. Fred Terry

Monterey

C. A. Collins
T. M. Crain

RHEA COUNTY

Dayton

Albert C. Broyles
(Mbr. Hamilton Co.)
James L. Mathis
J. J. Rodgers
(Mbr. Hamilton Co.)
W. A. Thomson
(Mbr. Hamilton Co.)

Spring City

Conrad L. Grabel
(Mbr. Hamilton Co.)

ROANE COUNTY

Harriman

Thomas L. Bowman
Fred J. Hooper
Lewis T. Howard
H. Stratton Jones
L. A. Killeffer
John R. Sisk

Kingston

Carl Henry
James A. Hoff-
meister
Chas. W. Moore-
field
Nat Sugarman

Oak Ridge

(See Anderson Co.)
Gould A. Andrews
Lawrence Ball
Robt. P. Ball
R. R. Bigelow
Velta F. Briuks
Marshall Bruer
Chas. Congdon
Betty Cooper
John P. Crews
Dexter Davis
John DePersio
Robt. E. DePersio
J. L. Diamond
Harry Dickson
T. Guy Fortney
William P. Hardy
J. M. Hays
William Holden
R. A. Johnson
Harvey Keese, Jr.
Avery P. King
Kenneth S. Lane
Thomas A. Lincoln
Lynn F. Lockett
Joseph S. Lyon
Paul R. Marsh
Dana Nance
Bill M. Nelson
Etna Little Palmer
Elmer L. Parrott
Lewis F. Preston
William W. Pugh
Charles J. Ragan
Thos. L. Ray
Anne W. Robinson
Hyman Rossman
Richard Rucker
Henry B. Ruley
Paul E. Spray
C. Harold Steffee
Charles R. Sullivan
Daniel M. Thomas
Gino F. Zanolli

Oliver Springs

S. J. Van Hook
Fred O. Stone
(Mbr. Anderson-
Campbell Co.)

Rockwood

Thomas A. Fuller
Robert S. Hicks
R. F. Regester
Geo. Shacklett
G. E. Wilson

ROBERTSON

*County**Cedar Hill*

R. H. Elder
Cross Plains
Robert C. Webster
Ridgetop
E. E. Botsford

Springfield

J. M. Jackson
W. P. Stone
John B. Turner
J. E. Wilkison

RUTHERFORD

*County**Murfreesboro*

Carl E. Adams
W. Stanley Barham
J. B. Black
J. T. Boykin
John Cason
B. S. Davison, Jr.
Paul Estes
R. James Garrison
S. C. Garrison, Jr.
Gilbert Gordon
Sam H. Hay
R. D. Hollowell
J. K. Kaufman
Lois M. Kennedy
M. B. Murfree, Jr.
Eugene P. Odum
James Payne
B. W. Rawlins
Wm. W. Shacklett
James W. Tenpenny
Bart N. White
Sam L. Wiles

Smyrna

George Goodall
James Lee Moore

SCOTT COUNTY

Norma

D. T. Chambers

Oneida

W. S. Cooper
M. F. Frazier
H. M. Leeds
Roy L. McDonald
M. E. Thompson
Milford Thompson

SEQUATCHIE

*County**Dunlap*

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ton, Jr.
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SEVIER COUNTY

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Miller
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Co.)
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Harwell Wilson
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Co.)

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ton
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ton

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Limestone	Sparta	W. K. Tilley	J. C. Fly, Centerville	Hickman
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			Robert I. Patterson, Medical Art Bldg., Knoxville	Knox
			J. B. Parker, Inskip	Knox
			W. D. Richards, Hamilton Bank Bldg., Knoxville	Knox
			M. S. Roberts, Medical Arts Bldg., Knoxville	Knox
			G. W. Stone, 3039 Kingston Pike, Knoxville	Knox
			George Wilhelm, Gatlinburg	Knox
			W. S. Alexander, Ridgely	Lake
			J. R. Lewis, Ripley	Landale
			J. W. Danley, Lawrenceburg	Lawrence
			A. L. Griffith, Elora	Lincoln
			H. K. Alexander, Fayetteville	Lincoln
			T. E. Ashley, Fayetteville	Lincoln
			C. L. Goodrich, Fayetteville	Lincoln
			W. S. Joplin, Petersburg	Lincoln
			J. E. Sloan, Fayetteville	Lincoln
			R. S. Brown, Jackson	Madison
			C. H. Webb, Jackson	Madison
			George C. Williamson, Columbia	Maury
			W. R. Webb, Hampshire	Maury
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			James H. Jones, Mt. Pleasant	Maury
			B. H. Woodard, Spring Hill	Maury
			W. W. Leonard, Tellico Plains	Monroe
			W. A. Rogers, Tellico Plains	Monroe
			W. J. Abel, Decatur	McMinn
			Wm. N. Brown, Livingston	Overton
			J. D. Capps, Livingston	Overton
			J. T. McDonald, Monroe	Overton
			A. B. Qualls, Livingston	Overton
			Lex Dyer, Cookeville	Putnam
			L. M. Freeman, Granville	Putnam
			R. H. Millis, Cookeville	Putnam
			J. T. Moore, Sr., Algood	Putnam
			John S. Freeman, Springfield	Robertson
			J. S. Hawkins, Springfield	Robertson
			A. R. Kempf, Springfield	Robertson
			E. M. Dings, Kingston	Roane
			George P. Zirkle, Kingston	Roane
			H. E. Handley, White Plains, N. Y.	Rutherford
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			J. M. Shipp, Benton, Miss.	Rutherford
			Shields Abernathy, 350 So. Highland, Memphis	Shelby
			W. G. Alford, 2212 Florida St., Memphis	Shelby
			G. E. Anderson, 1271 East Parkway, So. Memphis	Shelby
			Sam B. Anderson, Sr., Commerce Title Bldg., Memphis	Shelby
			I. L. Beauchamp, 1051 Madison Ave., Memphis	Shelby
			L. F. Boyd, 2067 Hallwood Drive, Memphis	Shelby
			W. F. Boyd, Cordova	Shelby
			J. P. Carter, 649 White Station Road, Memphis	Shelby
			Casa Collier, 629 Rozelle, Memphis	Shelby
			T. N. Coppedge, 1807 Harbert, Memphis	Shelby
			R. R. Davenport, 1853 Snowden, Memphis	Shelby
			George Gattley, 441 South Summerlin, Orlando, Fla.	Shelby
			W. R. Graves, 505 So. Highland, Memphis	Shelby
			E. C. Ham, 725 Jackson Ave., Memphis	Shelby
			H. B. Jacobson, 114 No. McLean Ave., Apt. 2, Memphis	Shelby
			A. G. Hudson, 3174 Southern Ave., Memphis	Shelby
			C. C. King, 1475 Linden, Memphis	Shelby
			V. D. King, 1037 North Parkway, Memphis	Shelby
			O. M. Laten, 1618 Exchange Bldg., Memphis	Shelby
			N. E. Leake, Shelby County Hospital, Memphis	Shelby
			Geo. R. Livermore, Sr., 1705 Massey Road, Germantown	Shelby
			W. H. Lovejoy, 511 South Parkway, East, Memphis	Shelby
			C. R. Mason, 11 West Mallory Ave., Memphis	Shelby
			J. F. Meadows, 3383 Summer Ave., Memphis	Shelby
			E. G. Meriwether, 3669 Northwood Drive, Memphis	Shelby
			J. A. McIntosh, Col. Mut. Tower, Memphis	Shelby
			L. C. McVay, Marion, Arkansas	Shelby
			Wallace Moore, 1161 Ravnor, Memphis	Shelby

VETERAN MEMBERS

M. L. Connell, Watracer	Bedford
B. L. Burdette, Shelbyville	Bedford
T. R. Ray, Shelbyville	Bedford
I. S. Tipton, Friendsville	Blount
G. D. Lequire, Walland	Blount
J. C. Anderson, Rockford	Blount
J. M. Ousley, Maryville	Blount
L. E. Trevathan, Brimeton	Carroll
L. C. Smith, Henderson	Chester
J. Horace Farrar, Manchester	Coffee
S. E. McDonald, Bells	Crockett
May C. Wharton, Pleasant Hill	Cumberland
W. B. Anderson, Doctors Bldg., Nashville	Davidson
A. C. Bailey, 1928 20th Avenue, South, Nashville	Davidson
R. W. Billington, RFD No. 2, Franklin	Davidson
C. E. Brush, 2320 West End Avenue, Nashville	Davidson
O. N. Bryan, 2122 West End Avenue, Nashville	Davidson
L. E. Burch, 2112 West End Avenue, Nashville	Davidson
B. F. Byrd, Sr., 301 7th Ave., No., Nashville	Davidson
Lucien Caldwell, RFD No. 4, Holt Road, Nashville	Davidson
Will Camp, Rock Island	Davidson
Sam Cowan, Sr., 1916 Church Street, Nashville	Davidson
M. M. Cullom, Bennie-Dillon Building, Nashville	Davidson
R. A. Daniel, Sr., 100 Fairway Drive, Donelson	Davidson
W. C. Dixon, Doctors Building, Nashville	Davidson
Duncan Eve, 2001 Haves Street, Nashville	Davidson
W. Frank Fessey, 2413 West End Ave., Nashville	Davidson
J. J. Frey, 3815 Baxter Avenue, Nashville	Davidson
R. W. Grizzard, 1310 Church Street, Nashville	Davidson
Geo. H. Harding, Bennie-Dillon Building, Nashville	Davidson
Wm. Moore Hardy, 1314 McChesney Ave., Nashville	Davidson
George A. Hatcher, College Grove	Davidson
O. S. Hank, Central State Hospital Nashville	Davidson
R. N. Herbert, 4124 Franklin Road, Nashville	Davidson
Wm. A. Horan, 1104 Ordway Place, Nashville	Davidson
J. P. Keller, 1703 Ashwood Ave., Nashville	Davidson
Howard King, Doctors Building, Nashville	Davidson
R. K. Landis, 2608-B Nolensville Road, Nashville	Davidson
John M. Lee, Doctors Bldg., Nashville	Davidson
John J. Lentz, Co. Health Dept., Nashville	Davidson
W. D. Martin, 302 2nd Ave., Murfreesboro	Davidson
John F. Moore, 4003 Vailwood Dr., Nashville	Davidson
P. G. Morrissey, Sr., 109 Woodmont Blvd., Nashville	Davidson
D. L. Mumpower, 414 Gallatin Road, Nashville	Davidson
Harold E. Paty, 4309 Estes Avenue, Nashville	Davidson
T. G. Pollard, Doctors Building, Nashville	Davidson
W. E. Reynolds, 2321 Shadow Lane, Nashville	Davidson
H. P. Reiger, 1311 9th Avenue, North, Nashville	Davidson
E. L. Roberts, Bennie-Dillon Bldg., Nashville	Davidson
B. T. Rucks, 6228 Cellini St., Coral Gables, Fla.	Davidson
H. H. Shoulders, 1120 Lipscomb Drive, Nashville	Davidson
S. R. Teachout, 2012 West End Avenue, Nashville	Davidson
A. B. Thach, Jr., 4404 Cadillac Ave., Nashville	Davidson
Harold Trubeberger, 820 Normal Circle, Memphis	Davidson
O. H. Wilson, 104 Clarendon Avenue, Nashville	Davidson
W. W. Wilkerson, Jr., Curtiswood Lane, Nashville	Davidson
Jack Witherspoon, Doctors Bldg., Nashville	Davidson
R. P. Beasley, Dickson	Dickson
W. I. Sugg, Dickson	Dickson
W. S. Alexander, Ridgelev	Dyer, Lake and Crockett
J. D. Brewer, Dyersburg	Dyer, Lake and Crockett
T. D. Holland Newbern	Dyer, Lake and Crockett
J. A. Ledbetter, Dyersburg	Dyer, Lake and Crockett
P. C. Tipton, Dyersburg	Dyer, Lake and Crockett
L. D. McAuley, Oakland	Fayette
M. Kirby-Smith, Sewanee	Franklin
O. N. Torian, Sewanee	Franklin
Wm. A. Lewis, Pulaski	Giles
C. Y. Bailey, Greeneville	Greene
R. S. Cowles, Sr., Greeneville	Greene
W. T. Mathies, Greeneville	Greene

J. L. Morgan, Commerce Title Bldg., Memphis	Shelby	Wm. Milton Adams, Memphis	Shelby
C. W. Musgraves, 45 South Barksdale, Memphis	Shelby	G. E. Ankerson, Memphis	Shelby
Edwin M. Peete, 1243 So. Wellington, Memphis	Shelby	J. M. Brockman, Memphis	Shelby
Arthur G. Quinn, Hot Springs, Ark.	Shelby	J. A. Buchignani, Memphis	Shelby
L. P. Pearce, Collierville	Shelby	Harry Johnson, Memphis	Shelby
Alma B. Richards, 1214 Central Ave., Memphis	Shelby	J. B. McNulty, Memphis	Shelby
L. V. Schmittou, 1304 Central Blvd., Brownsville, Texas	Shelby	Moore Moore, Sr., Memphis	Shelby
Harry C. Schmeisser, 4225 Walnut Grove, Rd., Memphis	Shelby	J. H. Smith, Memphis	Shelby
J. B. Stanford, 225 S.E. 6th St., Dania, Fla.	Shelby	F. Ward Smythe, Memphis	Shelby
W. L. Williamson, 188 So. Bellevue, Memphis	Shelby	Pitney Phillips, Robbins	Scott
Percy H. Wood, Co. Mut. Tower Bldg., Memphis	Shelby	Rhea E. Garrett, Hartsville	Smith
Ed. D. Gross, Chestnut Mound	Smith	George W. Leavell, Bristol, Va.	Sullivan
Isham H. Beasley, Gallatin	Sumner	James A. Loveless, Gallatin	Sumner
R. N. Buchanan, Sr., Hendersonville	Sumner	Lee K. Gibson, Johnson City	Washington
Walter W. Roark, Bethpage	Sumner	H. D. Miller, Johnson City	Washington
A. B. English, 26 4th St., Bristol	Sullivan-Johnson	B. S. Mayo, Dresden	Weakley
Arthur Hooks, 26 4th St., Bristol	Sullivan-Johnson		
Aaron Cole, Piney Flats	Washington, Carter, Unicoi		
John L. Hankins, Johnson City	Washington, Carter, Unicoi		
U. G. Jones, Johnson City	Washington, Carter, Unicoi		
R. W. Brandon, Sr., Martin	Weakley		
H. G. Edmondson, Martin	Weakley		

DECEASED MEMBERS

George W. Burchfield, Maryville	Blount	M. Shannon Allen, Jr., 2014 Minor Road	Charlottesville, Va.
W. B. Campbell, Cleveland	Bradley	Hubert Blakey, 509 West Oak St.	Alexandria, Va.
A. A. Baird, LaFollette	Campbell	Charles L. Butler, Huntsville Hospital	Huntsville, Ala.
J. J. Baird, LaFollette	Campbell	C. W. Brown, 1900 Brown St.	Alton, Ill.
C. B. Baughman, Elizabethton	Carter	Wayne S. DeWald	Waterbury, Conn.
H. J. Lemmon, Newport	Cocke	Jack L. Graeme, 556 Morris Ave.	Summit, N. J.
Edward Maurer, Tullahoma	Coffee	Axel C. Hansen, Knud-Hansen Memorial Hospital,	
E. L. Womack, Manchester	Coffee	Charlotte-Amalie	Virgin Islands
William Bate Dozier, Nashville	Davidson	Kent K. Kleinkauf	Galesburg, Ill.
Charles Marshall Hamilton, Nashville	Davidson	Robert Koch, Box 932	Tuscaloosa, Ala.
Norris C. Leonard, Nashville	Davidson	Jane H. Koll, 60 Armory St.	Fond du Lac, Wis.
Carl S. McMurray, Nashville	Davidson	A. B. Lipscomb, University of Virginia Medical	
Merrill Moore, Boston	Davidson	School	Charlottesville, Va.
George F. Secman, Nashville	Davidson	Curtis P. McCammon, 113 Newport St.	Arlington 74, Mass.
J. Peery Sloan, Jamestown	Fentress	William A. Nelson, 33 Princetonway, N.E.	Atlanta, Ga.
James M. Allen, Trenton	Gibson	D. Douglass Odell, 811 West Main Cross St.	Findlay, Ohio
C. H. Bainwell, Chattanooga	Hamilton	A. C. Parker	Clarksdale, Ark.
E. Marlin Fitts, Chattanooga	Hamilton	Edward C. Perkins	Formosa-Taipei, Taiwan
O. G. Hughes, Chattanooga	Hamilton	Chas. C. Randall, University of Mississippi	Jackson, Miss.
H. E. Christenberry, Knoxville	Knox	H. D. Riley, University of Oklahoma, Dept. of	
J. Gilbert Eblen, Knoxville	Knox	Pediatrics	Oklahoma City, Okla.
W. H. Enneis, Knoxville	Knox	Edward Roberson, 100 Federal Road	Houston, Texas
A. R. Garrison, Bvington	Knox	John M. Saunders, Federal Security Agency, Regional	
F. S. LeTellier, Knoxville	Knox	Office	Washington 25, D. C.
H. H. McCampbell, Knoxville	Knox	Joseph K. Seale, Apt. 712, 13995 Superior Rd.	Cleveland, Ohio
S. T. Chapman, Halls	Lauderdale	John H. Solomon, Bells Mills Road	Bethesda, Md.
J. M. McWilliams, Fayetteville	Lincoln	Hunter Steadman, 3516 St. John Drive	Dallas 5, Texas
Robert M. Darnall, Union City	Obion	D. T. Strickler, Jr., Downey Hospital	Tallahassee, Fla.
John Samuels, Hickman, Kentucky	Obion	Mary E. Thompson Stroud, 435 Elmo	LaMarque, Texas
Frank L. Sidwell, Livingston	Overton	George Vasey, Stansbury Bldg.	Rossville, Ga.
J. A. Scott, Murfreesboro	Rutherford	Starnes E. Walker, Park Central Hotel, 300 East	
		Armour	Kansas City 2, Mo.
		Joel J. White, Duval Medical Center, 2000 Jefferson	St.
		Richard White	Jacksonville, Fla.
		W. Lancy Whitehurst, Florida Board of	Hickman, Ky.
		Health	Jacksonville, Fla.

MEMBERS RESIDING OUTSIDE OF TENNESSEE

1956-57 MEMBERS OF WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

This data is accurate as of March 15, 1957, the end of the membership year of the auxiliary. New members who have been reported up to November, 1957, have

been added to this list. (*) Indicates members whose husbands are deceased.

ANDERSON COUNTY	CAMPBELL COUNTY	DAVIDSON COUNTY		
<i>Clinton</i>	<i>Caryville</i>	<i>Donelson</i>	Mrs. Irwin B. Eskind	Mrs. Travis H. Martin
Mrs. A. W. Bishop	Mrs. Charles Rogers	Mrs. E. F. Anderson	Mrs. H. M. Estes	Mrs. Andrew Mayer
Mrs. J. S. Hall	<i>Jellico</i>	Mrs. Luther A. Beazley	Mrs. William Ewers	Mrs. Ben R. Mayes
Mrs. John J. Smith	Mrs. Charles A. Prater	Mrs. Robert B. Gaston	Mrs. D. L. Evler	Mrs. G. Sydney McClellan
	<i>La Follette</i>	Mrs. Carl N. Gessler	Mrs. J. L. Farringer, Jr.	Mrs. Robert E. McClellan
<i>Lake City</i>	Mrs. M. L. Davis	Mrs. Charles H. Huddleston	Mrs. Ray O. Fessey	Mrs. C. C. McClure, Jr.
Mrs. R. B. Scott	Mrs. P. T. Howard	Mrs. James W. Manier	Mrs. R. M. Finks	*Mrs. Carl S. McMurray
<i>Norris</i>	Mrs. Paul J. O'Brien	Mrs. Luther E. Smith	Mrs. Robert M. Foote	Mrs. M. Charles McMurtry
Mrs. S. G. McNeeley	Mrs. J. W. Presley	Mrs. William B. Wadlington	Mrs. Howard R. Foreman	Mrs. Barton McSwain
<i>Oliver Springs</i>	Mrs. John C. Pryse		Mrs. S. Benjamin Fowler	Mrs. W. F. Meacham
Mrs. F. O. Stone	Mrs. R. C. Pryse	<i>Goodlettsville</i>	Mrs. Richard France	Mrs. Andrew H. Miller
	Mrs. James W. Riggs	Mrs. Roy R. Bowes	Mrs. Herbert C. Francis	Mrs. Cleo Miller
	Mrs. Lee J. Seargeant, Jr.	Mrs. W. R. C. Stewart	Mrs. John W. Frazier, Jr.	Mrs. Harry T. Moore
BENTON COUNTY	CARROLL COUNTY	<i>Madison</i>	Mrs. Thomas F. Frist	Mrs. Theodore Morford
(West Tenn. Consol. Aux.)	(West Tenn. Consol. Aux.)	Mrs. Frederic B. Cothren	Mrs. James L. Fuqua	Mrs. Hugh Morgan
<i>Camden</i>	<i>Bruceston</i>	Mrs. J. E. Sutherland	Mrs. James C. Gardner	Mrs. N. B. Morris
Mrs. A. T. Hicks	Mrs. R. T. Keeton	<i>Nashville</i>	Mrs. Sam Young Garrett	Mrs. Paul G. Morrissey, Jr.
Mrs. R. L. Horton	Mrs. L. E. Trevathan	Mrs. Crawford W. Adams	Mrs. R. S. Gass	Mrs. Max K. Moulder
	<i>Huntingdon</i>	Mrs. R. W. Adams, Jr.	Mrs. Hamilton V. Gayden	Mrs. Dewey Nemes
BLOUNT COUNTY	Mrs. Roy A. Douglass	Mrs. Joseph Hunter Allen	Mrs. John R. Glover	Mrs. Tom Nesbitt
<i>Alcoa</i>	Mrs. Robert B. Wilson	Mrs. Roy L. Allison	Mrs. J. E. Goldsberry	Mrs. Elliott Voss
Oliver K. Agee	<i>McKenzie</i>	Mrs. Ben Alper	Mrs. R. A. Goodwin	Mrs. James C. Overall
<i>Maryville</i>	Mrs. E. E. Edwards, Jr.	Mrs. William L. Alsbrook	Mrs. D. K. Gotwald	Mrs. Fred Overton
Mrs. John H. Bowen	Mrs. James T. Holmes	Mrs. Arthur R. Anderson	Mrs. John W. Griffith, Jr.	Mrs. Homer Pace
Mrs. Kuebel A. Bryant	<i>Trezevant</i>	Mrs. Edwin B. Anderson	Mrs. Tom Grizzard	Mrs. Roy W. Parker
Mrs. Henry A. Callaway	Mrs. James H. Robertson	Mrs. H. R. Anderson	Mrs. Laurence A. Grossman	Mrs. Thomas F. Parrish
Mrs. Lea Callaway		Mrs. Joe D. Anderson	Mrs. W. E. Gupton, Jr.	Mrs. Bernard J. Pass
Mrs. J. W. Christofferson	CARTER COUNTY	Mrs. J. J. Ashby	Mrs. Arnold Haber, Jr.	Mrs. C. Gordon Peerman
Mrs. Wm. C. Crowder	<i>Elizabethton</i>	Mrs. Joseph J. Baker	Mrs. David W. Hailey	Mrs. Tom G. Pennington
Mrs. Lynn F. Curtis	Mrs. Robert J. Allen	Mrs. Preston H. Bandy	Mrs. C. E. Haines	Mrs. George L. Perler
Mrs. Wm. N. Dawson	Mrs. Hoyle E. Bowman	Mrs. E. H. Barksdale	Mrs. Tom Haltom	Mrs. David R. Pickens, Jr.
Mrs. Robt. H. Haralson, Jr.	Mrs. Estill L. Caudill, Jr.	Mrs. Randolph Batson	Mrs. Charles Hamilton	Mrs. T. G. Pollard
Mrs. Cecil B. Howard	Mrs. Clarence E. Goulding, Jr.	Mrs. D. Scott Bayer	Mrs. James R. Hamilton	Mrs. Sam Prevo
Mrs. Homer L. Isbell, Jr.	Mrs. Leslie Herd	Mrs. Eric Bell	Mrs. W. M. Hamilton	Mrs. Walter Pyle
Mrs. Elgin P. Kintner	Mrs. Royce Holsey	Mrs. Lynch D. Bennett	Mrs. Glenn Hammonds	Mrs. Robert W. Quinn
Mrs. Samuel S. Lambeth, III	Mrs. John A. Knapp	Mrs. Edmund W. Benz	Mrs. Anderson P. Harris	Mrs. C. C. Randall
Mrs. Roy W. Laughmiller	Mrs. W. H. Longmire	Mrs. Stanley Bernard	Mrs. Jackson Harris	Mrs. Eugene Regen
Mrs. Julian C. Lentz, Jr.	Mrs. Elmer T. Pearson	Mrs. John H. Beveridge	Mrs. Robert C. Hartman	Mrs. Sidney Reichman
Mrs. Chester B. Lequire	Mrs. Dillard Sholes	Mrs. Otto Billig	Mrs. Aubrey B. Harwell	Mrs. J. Ralph Rice
Mrs. Robert Fitzwater	Mrs. James M. Willett	Mrs. F. R. Tremaine Billings	Mrs. F. R. Haselton	Mrs. Greer Ricketson
Leven		Mrs. Russell Birmingham	Mrs. O. S. Hawk	Mrs. Douglas H. Riddell
Mrs. Frank Smith Lovin-	CHEATHAM COUNTY	Mrs. Eugene L. Bishop, Jr.	Mrs. James T. Hayes	Mrs. H. D. Riley, Jr.
good	(Davidson Co. Aux.)	Mrs. L. K. Bishop	Mrs. James B. Helme	Mrs. Elkin Rippy
Mrs. John F. Manning	<i>Ashland City</i>	Mrs. J. B. Boddie, Jr.	Mrs. R. N. Herbert	Mrs. Sam S. Riven
Mrs. John M. McCulloch	Mrs. J. P. Glover, Jr.	Mrs. George W. Bounds	Mrs. J. L. Herrington	Mrs. B. H. Robbins
Mrs. Norman S. McKinnon	CHESTER COUNTY	Mrs. Henry B. Brackin, Sr.	Mrs. B. K. Hibbett, III	Mrs. Joseph D. Robertson
Mrs. Jack S. Phelan	(West Tenn. Consol. Aux.)	Mrs. Henry B. Brackin, Jr.	Mrs. J. B. Hibbits, Jr.	Mrs. Robert Roy
Mrs. G. Tom Proctor	<i>Henderson</i>	Mrs. T. Fort Bridges	Mrs. Irving R. Hillard	Mrs. Peirce Ross
Mrs. James N. Proffitt	Mrs. Oscar M. McCollum	Mrs. Clinton E. Brush	Mrs. J. William Hillman	Mrs. Sol Rosenblum
Mrs. B. P. Ramsey	CLAY COUNTY	Mrs. J. Thomas Bryan	Mrs. J. Harvill Hite	Mrs. Louis Rosenfeld
Mrs. Joe Henderson, Jr.	(Five County Aux.)	Mrs. O. N. Bryan	Mrs. George W. Holcomb, Jr.	Mrs. Robert Neil Sadler
Mrs. Harris T. Vandergriff	<i>Celina</i>	Mrs. Robert N. Buchanan	Mrs. Andrew Hollabaugh	Mrs. Dan S. Sanders, Jr.
Mrs. Lowell E. Vinsant	Mrs. Champ E. Clark	Mrs. John C. Burch	Mrs. Fowler Hollabaugh	Mrs. Houston Sarratt
Mrs. John A. Yarbrough	COFFEE COUNTY	Mrs. Joe G. Burd	Mrs. Virgil M. Howie	Mrs. Hanley Savers
	<i>Tullahoma</i>	Mrs. Benjamin F. Byrd, Jr.	Mrs. William Howard	Mrs. Wm. F. Sheridan, Jr.
BRADLEY COUNTY	(Member-at-large)	Mrs. James J. Callaway	Mrs. W. W. Hubbard	Mrs. Larry G. Schull
<i>Cleveland</i>	CROCKETT COUNTY	Mrs. Sam Carney	Mrs. James M. Hudgins	Mrs. Herbert Schulman
*Mrs. George G. Ash	(West Tenn. Consol. Aux.)	Mrs. R. O. Cammon	Mrs. G. W. Hudson	Mrs. A. Wm. Scott, Jr.
Mrs. Wesley Barton	<i>Bells</i>	Mrs. G. K. Carpenter	Mrs. Vernon Hutton, Jr.	Mrs. A. B. Scoville, Jr.
Mrs. Marvin Roscoe	Mrs. Elisha Farrow	Mrs. Oscar W. Carter	Mrs. M. D. Ingram	Mrs. Gordon Sell
<i>Batchelor</i>	Mrs. Charles N. Hickman	Mrs. Norman M. Cassell	Mrs. Albert P. Isenhour	Mrs. Douglas C. Seward
Mrs. Wm. B. Campbell	Mrs. William R. Sullivan	Mrs. William R. Cate, Sr.	Mrs. J. McK. Ivie	Mrs. John Shapiro
Mrs. Chalmer Chastain, Jr.		Mrs. William R. Cate, Jr.	Mrs. John Jarrell	Mrs. Harry S. Shelley
Mrs. William B. Foster	CUMBERLAND COUNTY	Mrs. L. F. Cayce	Mrs. Hollis E. Johnson	Mrs. Abram Shmerling
Mrs. Everett R. Ferguson	(Five County Aux.)	Mrs. Robert Chalfant	Mrs. Ira T. Johnson	Mrs. H. H. Shoulders, Jr.
Mrs. Jack R. Free	<i>Crossville</i>	Mrs. Amos Christie	Mrs. Palmer Jones	Mrs. H. S. Shoulders
Mrs. William A. Garrett	Mrs. R. Gene Cravens	Mrs. Everette Clayton, Jr.	Mrs. Tom M. Jordan	Mrs. Harrison J. Shull
Mrs. Charles S. Heron	Mrs. Paul A. Erwin, Jr.	Mrs. John H. Coles, III	Mrs. R. H. Kampmeier	Mrs. Annie Sikes
Mrs. Ivan C. Humphries	Mrs. Wm. E. Evans	Mrs. W. J. Core	Mrs. Alvin E. Keller	Mrs. Charles B. Smith
Mrs. Frank Jones, Jr.	Mrs. Roy D. Ivey	Mrs. Orrie A. Couch, Jr.	Mrs. J. Allen Kennedy	Mrs. Daugh W. Smith
*Mrs. Raymond O. Kibler	Mrs. Robert M. Metcalfe	Mrs. Fred Cowden	Mrs. W. G. Kennon, Jr.	Mrs. H. Carroll Smith
Mrs. Cecil H. Kimball	Mrs. Marion M. Young	Mrs. George B. Crafton	Mrs. Carl Kirchmaier	Mrs. Marion L. Smith
Mrs. James C. Lowe		Mrs. H. James Greecraft	Mrs. James A. Kirtley, Jr.	Mrs. Bertram Sprockin
*Mrs. J. Lake McClary		Mrs. R. K. Crowe	Mrs. Morse Kochitzky	Mrs. Gray Stahlman
Mrs. Joseph McCain		Mrs. Rollin A. Daniel, Jr.	Mrs. Leonard J. Koenig	Mrs. Frank Stevens
*Mrs. J. L. McKenzie		Mrs. William J. Darby	Mrs. Roland D. Lamb	Mrs. Hugh L. C. Stevens, III
Mrs. Hayes Mitchell		Mrs. P. V. Daugherty	Mrs. Ralph Larsen	Mrs. Lee Wm. Stewart
Mrs. William I. Proffitt		Mrs. Milton D. Davis	Mrs. H. T. Lavelle	Mrs. Joe M. Strayhorn
Mrs. John A. Rogness		Mrs. W. A. Demonbrunem	Mrs. Allen Lawrence	Mrs. William D. Sumpter, Jr.
*Mrs. Carl T. Speck		*Mrs. Genevieve Derivaux	Mrs. J. J. Lentz	Mrs. Clarence S. Thomas
Mrs. Samuel J. Sullivan		Mrs. Walter L. Dively	Mrs. James P. Lester	Mrs. J. N. Thomasson
Mrs. Madison Trewitt		Mrs. W. C. Dixon	Mrs. Milton S. Lewis	Mrs. John B. Thomson
Mrs. Gilbert A. Varnell		Mrs. Robert Doster	Mrs. Richard C. Light	Mrs. Charles B. Thorne
Mrs. Irvin M. Weir		Mrs. Beverly Douglas	Mrs. John Paul Lindsay	Mrs. W. O. Tirrill, Jr.
		Mrs. Price Duff	Mrs. Robert J. Linn	Mrs. Kirkland Todd, Jr.
		Mrs. George Duncan	Mrs. A. B. Lipscomb	Mrs. W. J. Toleson
		Mrs. Herbert Duncan	Mrs. Jackson Lowe	Mrs. C. B. Tucker
		Mrs. L. W. Edwards	Mrs. Frank Luton	Mrs. John M. Tudor
		Mrs. Philip C. Elliott	Mrs. Philip L. Lytle	Mrs. W. O. Vaughn
		Mrs. James W. Ellis	Mrs. Robert H. Magruder	Mrs. James W. Ward
			Mrs. Guy Maness	Mrs. Russell D. Ward

Mrs. Tom F. Wauder
Mrs. Tom S. Weaver
Mrs. B. H. Webster
Mrs. Albert Weinstein
Mrs. Frank F. Whitacre
Mrs. A. L. White
Mrs. J. T. Whitfield
Mrs. David G. Wilbur
Mrs. W. W. Wilkerson
Mrs. E. E. Wilkinson
Mrs. Edwin L. Williams
Mrs. Frank Witherspoon
Mrs. Clarence C. Woodcock,
Jr.

Mrs. M. C. Woodlin
Mrs. John R. Woods
Mrs. J. Lanie Wyatt
Mrs. John B. Yommans
Mrs. L. D. Zeidberg
Mrs. Tom B. Zerloss, Jr.

Old Hickory
Mrs. L. C. Gammel
Mrs. Eugene P. Johnson

DYER COUNTY (Northwest Tennessee Auxiliary)

Dyersburg
Mrs. W. Eugene Anderson
Mrs. J. Paul Bird
Mrs. Thomas V. Banks
Mrs. John B. Berry
Mrs. James W. Bonds
Mrs. Percy A. Conyers
Mrs. John E. Carnes
Mrs. Dan Gray
Mrs. Robert T. Kerr
Mrs. James C. Moore
Mrs. Julian G. Price
Mrs. R. David Taylor
Mrs. W. I. Thornton, Jr.

Finley
Mrs. Luther Edwards

Newbern
Mrs. Joseph T. Fuller
Mrs. William L. Phillips

Tigrett
Mrs. R. E. Miller

FAYETTE COUNTY (West Tenn. Consol. Aux.)

Somerville
Mrs. John L. Armstrong
Mrs. Frank S. McKnight
Mrs. William F. Outlan
Mrs. Lee Rush, Jr.

FENTRESS COUNTY (Five County Aux.)

Jameson
Mrs. John Peery Sloan

FRANKLIN COUNTY

Sewanee
Mrs. Henry T. Kirby-Smith,
(Member-at-large)

GIBSON COUNTY (West Tenn. Consol. Aux.)

Dyer
Mrs. John Jackson

Humboldt
Mrs. Charles W. Davis
Mrs. Albert H. Fick
Mrs. James D. Rozzell

Medina
Mrs. Robert H. Morris

Milan
Mrs. George I. Burkett
Mrs. Hubert P. Glemmer
Mrs. James O. Fields
Mrs. Rex F. Hughes
Mrs. Philip G. Williams

GREENE COUNTY

Greenville
Mrs. V. Robert Bottomley
Mrs. Robert G. Brown
Mrs. L. F. Collidge
Mrs. R. S. Cowles, Jr.
Mrs. R. S. Cowles, Sr.
Mrs. L. E. Dyer
Mrs. Luke I. Ellenburg

Mrs. Rae B. Gibson
Mrs. Grover C. Hawkins
Mrs. Hal Henard
Mrs. Nathan P. Horner
Mrs. Benjamin J. Keebler,
Jr.
Mrs. Haskell B. McCollum
Mrs. W. L. McGuffin

Mosheim
Mrs. Dale Brown

HAMBLETT COUNTY

Morristown
Mrs. C. J. Duby (Member-
at-large)

HAMILTON COUNTY

Chattanooga
Mrs. Chester G. Adams
Mrs. John W. Adams, Jr.
Mrs. Julian Adams
Mrs. George Alder
Mrs. Charles Harold Alper
Mrs. Harry S. Anderson
Mrs. L. Lee Arnold
Mrs. Merton Baker
Mrs. Robert E. Baldwin
Mrs. Howard B. Barnwell
Mrs. George Beckmann, Jr.
Mrs. Samuel S. Binder
Mrs. William R. Bishop
Mrs. J. R. Blanks
Mrs. Robert J. Boehm
Mrs. Walter E. Boehm
Mrs. Wm. D. Brackett
Mrs. John W. Bradley
Mrs. Frank S. Brannen
Mrs. A. F. Branton
Mrs. Beach A. Brooks
Mrs. J. Culpepper Brooks,
Jr.
Mrs. J. Culpepper Brooks,
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son

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Ripley
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Mrs. Stewart L. Num
Mrs. Landrum Tucker
Mrs. Charles R. Webb
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Loudon
Mrs. Wm. T. McPeake

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(Davidson Co. Aux.)
Mrs. Max F. Painter
(Sumner Co. Aux.)
Mrs. John R. Smith
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Mrs. William G. Crook
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Mrs. Roy A. Douglass, Jr.
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Mrs. Oliver H. Graves
Mrs. Walter Harrison
Mrs. George Harvey, Jr.
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Mrs. Stanford M. Herron
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Mrs. George B. Hubbard
Mrs. Leland M. Johnston
Mrs. Chester K. Jones
Mrs. Duval H. Koonce
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Mrs. Frank A. Moore
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Mrs. William Roberts
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Mrs. H. T. Simpson
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Mrs. Earl Williamson
Mrs. Paul C. Wylie

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(Hamilton County Aux.)

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Mrs. David H. Tunnet
South Pittsburg
Mrs. James B. Hayron
Mrs. William L. Headrick, Jr.
Mrs. Viston Taylor, Jr.

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(Davidson Co. Aux.)
Mrs. Warren Rucker
(Member-at-large)
Mrs. Leon S. Ward
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Mrs. Lewis D. Curtner
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Mrs. William E. Force
Mrs. Milnor Jones
Mrs. Jess A. Powell, Jr.
Mrs. Arthur M. Shelamer
Mrs. Lester H. Shields
Etowah
Mrs. Herbert P. Whittle, Jr.

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(McMinn-Monroe Aux.)
Dacula
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*Miss Bess Abel (daughter)

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Mrs. Horace McGuire
Sweetwater
Mrs. James H. Barnes
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Mrs. Joe H. Henshaw
Mrs. Douglas F. Heuer
Mrs. Tellord A. Lowry
Mrs. Joseph F. Young

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Mrs. David Hadley
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(Five County Aux.)
Livingston
Mrs. Herman B. Nevans
Mrs. Walter F. Sidwell

PICKETT COUNTY
(Five County Aux.)

Byrdstown
Mrs. Malcolm E. Clark
POLK COUNTY
(McMinn-Monroe Aux.)
Benton
Mrs. John H. Lillard

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Ilgood
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Mrs. John T. Moore, Sr.
Cookeville
Mrs. Jack L. Clark
Mrs. James T. DeBerry
Mrs. Kenneth L. Haile
Mrs. Wm. A. Hensley, Jr.
Mrs. William A. Howard
Mrs. Jere W. Lowe
Mrs. Dale William Mattson
Mrs. Thurman Shipley
Mrs. William S. Taylor
Mrs. J. Fred Terry
Monterey
Mrs. Claude A. Collins
Mrs. Theodore M. Grain

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Dayton
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Mrs. James I. Mathis
Mrs. J. J. Rodgers
Mrs. W. Agnew Thomison

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Memphis
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Mrs. James E. Alexander
Mrs. Chester G. Allen
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 Mrs. C. W. Wooley
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PLACEMENT SERVICE

The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts on both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.

Locations Wanted

A 23 year old married physician, Church of Christ. Graduate of University of Tennessee. Desires general practice in community of 2,000-10,000 in middle or west Tennessee. Available April 1, 1958. LW-277

A 31 year old married physician, Protestant. Graduate of Ohio State University. Priority IV. Completing residency in Anesthesiology. Desires private or group practice. Available July, 1958. LW-278

A 31 year old single physician, Roman Catholic. Graduate of University of Pennsylvania. Priority IV. Desires general practice with some orthopedics in group or partnership. Available immediately. LW-281

A 39 year old married physician, Baptist. Graduate of Chicago Medical School. Priority IV. Member South East Society of Neurology and Psychiatry. Desires private, clinical or associate practice in psychiatry. Available July, 1958. LW-283

A 27 year old married physician, Methodist. Graduate Duke University Medical School. Priority IV. Desires clinical or associate general practice. Available July, 1958. LW-284

A 44 year old married physician, Church of God. Graduate University of Indiana School of Medicine. Has just completed 9 years service in mission field. Desires assistant or associate practice in general surgery. Available July, 1958. LW-285

A 47 year old married physician, Methodist. Graduate of University of Tennessee. Now completing service. Desires associate or clinical general practice. Would consider industrial. Available November, 1957. LW-286

A 30 year old married physician, Protestant. Graduate of University of North Carolina. Priority IV. Desires practice in Internal Medicine in community of at least 50,000. Available June, 1958. LW-287

A 31 year old married physician, Baptist. Graduate of Baylor University College of Medicine. Priority IV. Desires general practice in East Tennessee community over 5,000 population. Available July 1, 1958. LW-288

A 27 year old single physician, Methodist. Graduate of University of Tennessee. Priority IV. One year surgical residency, desires general prac-

tice with surgery in eastern Tennessee. Available January, 1958. LW-289

A 30 year old married physician, Episcopalian. Graduate of University of Tennessee. Priority IV. Desires clinical or associate practice in general practice and surgery. Has two years surgical residency. Available July 1, 1958. LW-290

A 32 year old married physician, Methodist. Graduate of Vanderbilt University. Priority IV. Desires practice in Internal Medicine in community of 20,000 to 150,000. Available July, 1958. LW-292

A 27 year old married physician, Presbyterian. Graduate of University of North Carolina School of Medicine. Now completing service. Desires location in general practice in east Tennessee community. Available January, 1958. LW-294

A 29 year old married physician, Methodist. Graduate of University of Tennessee. Desires general practice in community of 6,000-25,000. Available April, 1958. LW-295

Physicians Wanted

Community in mid-central Tennessee needs physician to replace present one who is leaving to enter group practice. New clinic, equipped and available at low rent. Good location. PW-89

Local position for desirable young physician with administrative ability. An opportunity to do public relations with the medical profession and lay people. Two-year tenure required. Excellent introduction into medical circles. PW-93

Large company located in Nashville desires assistant medical director with experience in cardiology. Company has 17-bed hospital and fully equipped clinic. Position requires 1 year previous experience. PW-94

East Tennessee community of 7,000 desires physician to take care of general practice and OB, no surgery. Excellent opportunity for physician looking for desirable location. PW-95

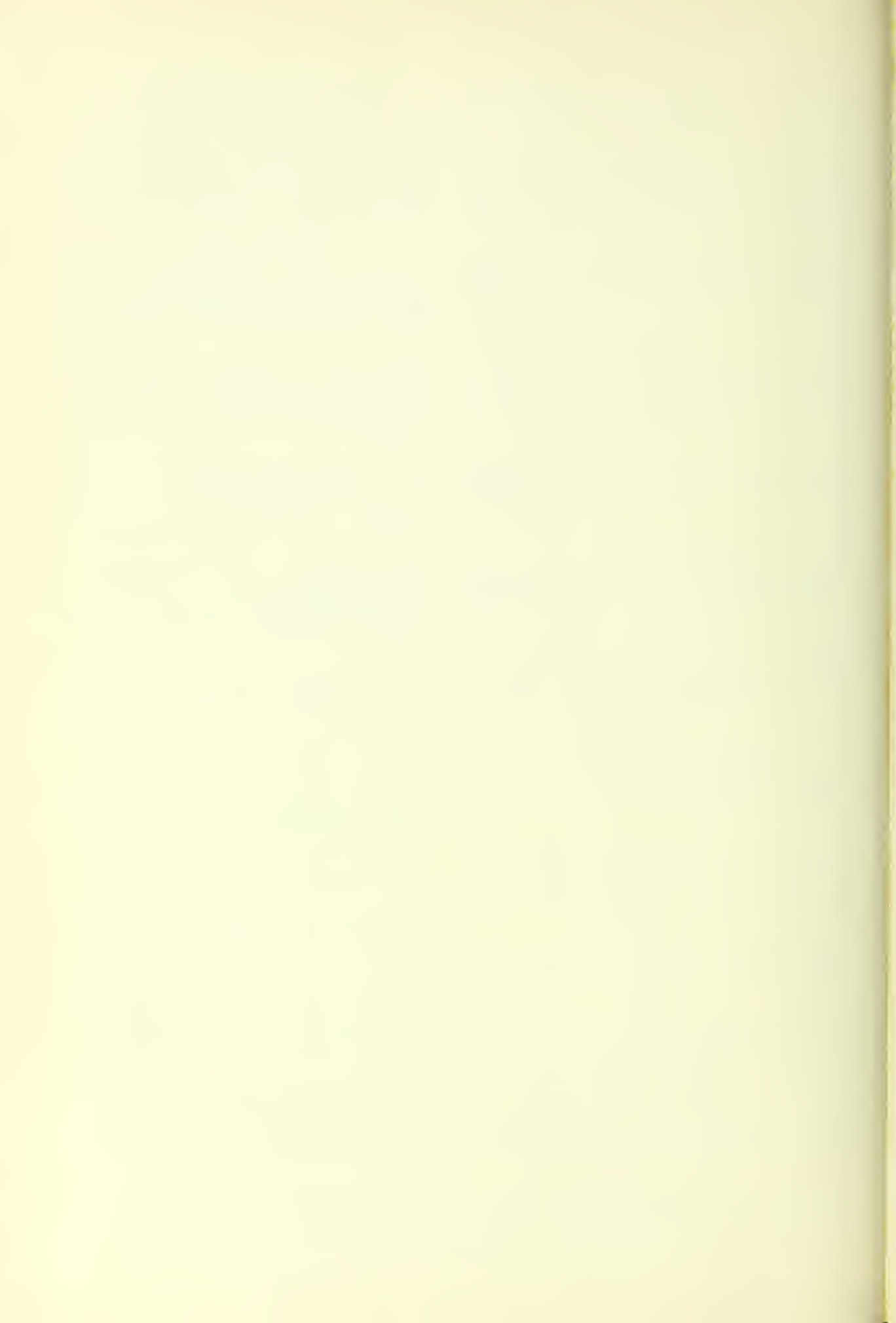
Community of 1,200 in southern Tennessee desires physician to replace retired doctor. One other physician in community. Office space and some equipment available. PW-96

Large company in eastern Tennessee desires physician under 35 years of age. Office space and all equipment provided in dispensary. Prefer internal medicine but not required. PW-97

Hospital in community of 20,000 in central Tennessee desires physicians with specialty in Pathology and Radiology. Arrangements will be discussed in interview. PW-98

Wanted: Internist interested in association with established Medical Clinic in West Tennessee community. PW-99





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